OPW
FUEL MANAGEMENT SYSTEMS

System2®

Pacific Pride Multiple Network Version

Operator's Manual

FSC Version 24.66G

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Effective September 1, 2002

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Meet System2!

Introduction

The Petro Vend SYSTEM2 is a flexible, powerful tool for fuel management that is easy to program and even easier to use. The SYSTEM2 gives you security, accountability and control.

A typical System2 installation consists of:

- The FSC (Fuel Site Controller). This is where the software described in this manual resides.
- One or more C/OPTs (Commercial/Outdoor Payment Terminals). See the *C/OPT User Manual* for more information.
- One or more PCTs (Pump Control Terminals). See the *PCT User Manual* for more information.

Your components will vary depending upon which version of System2 you have.

Features

- Superior Fuel Site Control
- Programmed for Pacific Pride products right out of the box
- Maximum Configuration Flexibility
- On-site or remote access
- Automatic daily pump totals
- On-demand Pump, Product and Shift Total
- Optical Card Lockout
- Programmable Open/Close system times
- Multiple password options
- Self-test and diagnostic functions.

C/OPT? FIT?

Pacific Pride System2's use Petro Vend's Commercial/Outdoor Payment Terminals (C/OPT) as the fueling terminal. System2 software also recognizes Petro Vend's Fuel Island Terminal (FIT). To the FSC, the two devices are essentially identical.

In this manual, anywhere you see "FIT," "C/OPT" can be assumed.

Network Compatibility

Your System2 is designed for Pacific Pride sites equipped to handle Comdata, Visanet (bank cards) and/or SmartLock MultiDesq cards.

Note

To configure the SmartLock for use in the Pacific Pride network, see ***page 31****. To configure for Visanet, see* ***page 25****.*

Determining System2 Software Version

Your System2 Pacific Pride software is one of the following:

- Pacific Pride only
- Pacific Pride with Visanet
- Pacific Pride with SmartLock-MultiDesq
- Pacific Pride with Visanet *and* SmartLock-MultiDesq

Enter a **SHOW SYSTEM** command into System2 to see which version software is in your System2 FSC.

Card Acceptance

Also see *Card Disposition* on page 4.

Software	Cards Accepted
Pacific Pride	- Pacific Pride optical cards
Pacific Pride with Visanet	- Pacific Pride optical cards - Bank cards (specific cards accepted depend on site setup)
Pacific Pride with Smart-Lock/MultiDesq	- Pacific Pride optical cards - Comdata cards - Magnetic cards processed by Comdata
Pacific Pride with Visanet AND SmartLock/MultiDesq	- Pacific Pride optical cards - Bank cards (specific cards accepted depend on site setup) - Comdata cards - Magnetic cards processed by Comdata

Card Authorization Method

Card Type	Authorization Method
Pacific Pride optical card	System2 FSC
Bank cards	Through System2 FSC dial-up modem
Comdata cards	SmartLock/MultiDesq dial-up modem/satellite link

Card Disposition

Also see *Card Acceptance* on page 3. This is what happens to various cards with Pacific Pride software enabled for MultiDesq, Visanet, both networks or neither network.

Software	Card Disposition
Visanet and MultiDesq BOTH DISABLED	- Valid Pacific Pride/Amerinet optical cards via Fuel Site Controller - All magnetic cards not accepted
Visanet ENABLED MultiDesq DISABLED	- Only cards enabled in Visanet Host Card Configuration go to Visanet - Valid Pacific Pride/Amerinet optical cards go to Fuel Site Controller.
Visanet DISABLED MultiDesq ENABLED	- Magnetic cards processed by Comdata are sent to MultiDesq - Valid Pacific Pride/Amerinet optical cards go to Fuel Site Controller
Both Visanet AND Multi-Desq ENABLED	- Only cards enabled in Visanet Host Card Configuration go to Visanet - Magnetic cards processed by Comdata go to MultiDesq - Pacific Pride/Amerinet optical cards go to Fuel Site Controller

Hardware Installation

Warning

Do NOT mount the Fuel Site Controller or any peripheral equipment within or above your site hazardous area.

WARNING!

This manual contains several important warnings. You must heed these warnings to ensure the safe and effective operation. Failure to comply with these warnings may create hazardous conditions and/or damage the system.

Safety Codes

Installation must be in accordance with the National Electrical Code (NFPA No.70), the Automotive and Marine Service Station Code (NFPA No. 30A) and the Compressed Natural Gas Code (NFPA No. 52). Installers are responsible for following any applicable local codes.

See the Hazardous Area definitions in the *C/OPT User's Manual.* Installation to listed pumps or dispensers is subject to approval by the authority having jurisdiction.

Be sure to check the packaging carefully for any damage that might have occurred during shipping. Contact the shipper if damage is discovered. The cabinet and most components for each **SYSTEM2** unit are packed in one box. Power supplies, pedestals, and printers are packed separately.

Petro Vend Data Sheet

The Data Sheet lists details about your particular system, and is packed with this manual. *Store this sheet in a secure location* - you may need it when calling for service or information.

Terminals, modems and accessory journal printers must be UL and CSA listed, and have an EIA-standard RS-232C or RS-422 interface.

Site Wiring

Wiring Considerations

- Use ONLY oil- and gasoline-resistant TFFN, THHN, or THWN wire.
- Each Petro-Net twisted pair conductor must be 18 AWG or greater
- Run the twisted-pair through steel conduit from a Petro-Net junction box (*Figure 6*, *Figure 7*, *Figure 8*) to the fueling terminals, the FSC and/or the indoor PCT cabinet.
- Connect the FSC, the fueling terminals, and any indoor pump control device to the same electrical supply.
- Connect the line voltage supply wires and the ground wire from a dedicated circuit breaker to the power terminal block in each fueling terminal.
- Connect line voltage and ground wires from the circuit breaker to (if present) each indoor pump control device.
- Terminate all ground wires at the service/circuit breaker panel.

FSC Power Conduit

Install rigid steel conduit from the Petro-Net junction box directly to the site circuit breaker panel.

Do *not* run this conduit through the wiring trough.

If needed, install an outlet box with this conduit to power the FSC and all peripheral equipment (terminal, printer, modem, etc.) from one circuit.

Petro-Net Wiring

Petro-Net uses RS-485 communication. The RS-485 standard requires twisted pair wire for proper operation. Twisted pair wire is available from Petro Vend as part number **12-1029**.

To make twisted-pair cable, simply twist together -- with roughly ten twists per foot -- two lengths of TFFN, THHN or THWN wire.

Warning

The MAXIMUM TOTAL length of Petro-Net at each site is 5,000 feet. This is NOT per device. This is TOTAL of all devices controlled by the FSC.

Example

A site contains two C/OPTs, a remote pump controller and a junction box. Each fueling terminal is 1,000 feet from the junction box. The pump control is 100 feet from the junction box. The TOTAL length of Petro-Net in this example is 2,100 feet.

Petro-Net Junction Box

Install the Petro-Net junction box within three feet of the FSC.

Warning

NEVER run Petro-Net wiring in the same trough as pump power wiring!

- Connect Petro-Net to pins #1 (LEFT) and #2 (RIGHT) of the junction box cover (pins 3 and 4 are not used).
- Screw the cover to the junction box
- Connect the twisted-pair to the Petro-Net terminals in the fueling terminals and, if applicable, the indoor PCT(s).

Caution

Be sure that the left terminal of each device is *not* crossed to the right terminal of another device.

Fuel Site Controller

The Fuel Site Controller, or FSC, is the heart of the System2. The small tabletop box receives your input via a terminal or PC, and controls all of your site's C/OPTs, and pump control terminals.

The FSC contains the System2 software, which is described in greater detail later in this manual.

FSC Specifications

Table 1: Fuel Site Controller Specifications

Dimensions	2" H x 10" W x 11" D (5 x 25 x 28 cm)
Power Requirements	110-120 VAC, 50/60 Hz (220-240 VAC, 50/60 Hz) 50W max
Operating Temperature Range	32EF to +122EF (0EC to +50EC)
Rear Port Protocols	PN (Petro-Net): RS-485 CAP (Terminal): Proprietary protocol MODEM (Modem): RS-232 AUX 1-3 (Auxiliary Inputs): RS-232
Front Panel Controls & Indicators	**RESET** button. Press to "warm-start" system (retains config. data) **FUNCTION** button. Use with RESET button to "cold-start" system **STATUS** display. The number of devices the FSC is currently communicating with.

FSC Baud Rate

The default **FSC baud rate is 1200**. The default **Petro-Net baud rate is 9600**. This usually does not need to be changed. Available rates are 300, 1200, 2400, and 9600 baud.

See *Table 2* to set the baud rate for the MODEM port. Use DIP switch 1 (*Figure 1*).

Table 2: FSC DIP SW 1 -- Fuel Site Controller Baud Rate

Baud Rate	Position 6	Position 7
300	OPEN	OPEN
1200	OPEN	CLOSED
2400	CLOSED	OPEN
9600	CLOSED	CLOSED

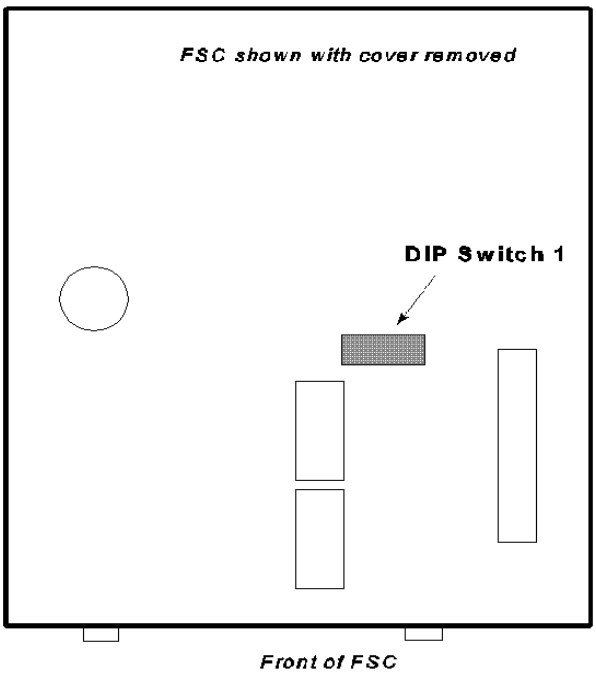


Figure 1: FSC DIP Switch Location

FSC-to-Pacific Pride/Smartlock Connections

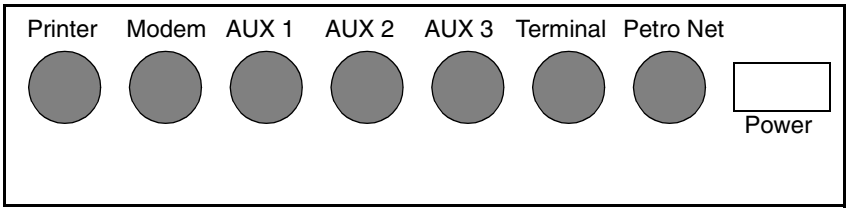


Figure 2: System2 FSC Ports

- **PRINTER** - Journal printer with *1444-R5/PTR-R5* cable.
- **MODEM** - Not used.
- **AUX 1** - For internal UPC option only.
- **AUX 2** - To MultiDesq port with *1444-R5/PTR R5* cable.
- **AUX 3** - To Visanet dial-up modem via *1456* cable.

- **TERMINAL** - To SmartLock WTI box, port 1, with *1444-R5/PTR-R5* cable and null modem adaptor.
- **PETRONET** - To PetroNet junction box with *1443* cable.

Overall FSC Connections

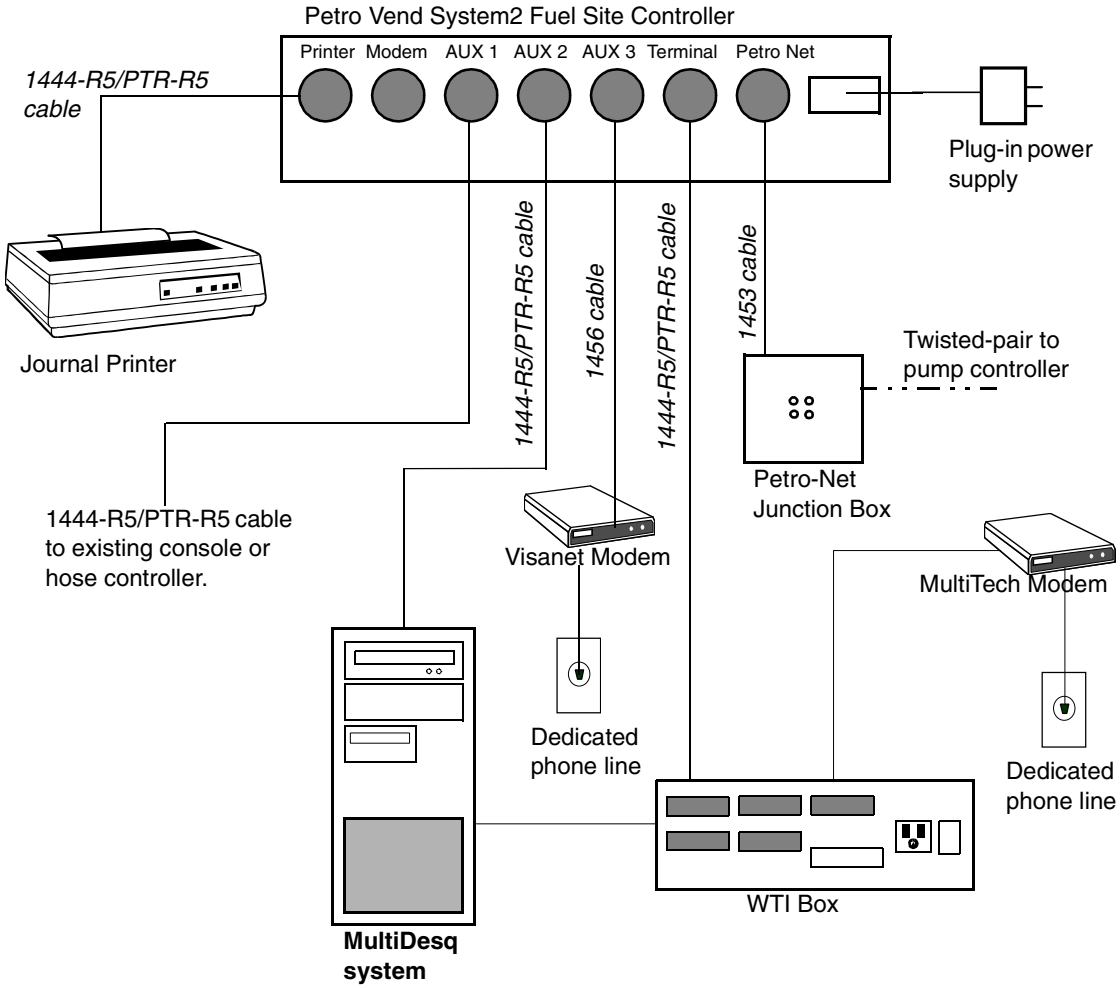


Figure 3: Petro Vend FSC Connections

Note

For other equipment at the site refer to that equipment's instructions for details.

Visanet Equipment

External dial-up modem and a dedicated phone line are required.

SmartLock-MultiDesq Equipment

SmartLock equipment includes the MultiDesq PC unit and the WTI box (see *Figure 4* on *page 11*).

Plug the DIN end of the supplied **1444-R5** cable into the System2 FSC **AUX 2** port (*Figure 2*).

Plug the other end of the cable into the MultiDesq port.

SmartLock WTI Connections

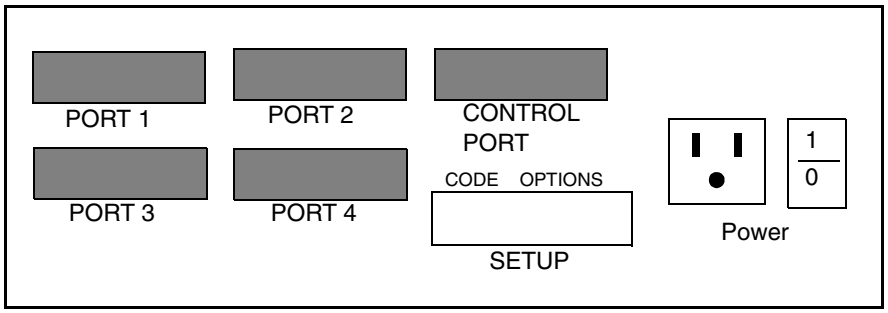


Figure 4: WTI Box Ports and Controls

The WTI box is a kind of switch that lets both the System2 FSC and the networking hardware use the same modem.

- **PORT 1** - To FSC TERMINAL port with PTR-R5 cable and null modem adaptor.
- **PORT 2** - Not used.
- **PORT 3** - Not used.
- **PORT 4** - To MultiDesq. See MultiDesq instructions.
- **CONTROL PORT** - To MultiTech modem with the serial cable supplied with the WTI box.
- **SETUP DIP SWITCHES** - Set baud rate.

WTI Box Baud Rate

Use the "CODE/OPTIONS" SETUP DIP switches on the WTI box (see *Figure 4* on *page 11*) to choose 1200, 2400 or 9600 baud for the WTI ports.

Note

WTI baud rate must match the FSC baud rate.

Table 3: WTI Baud Switch Settings ("U" = Up, "D" = Down)

Baud	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1200	U	D	D	U	U	D	D	U	U	U	D	D	U	U	U	D	U	U
2400	U	D	D	U	U	D	D	U	D	D	U	D	U	U	U	D	U	U
9600	U	D	D	U	U	D	D	U	D	U	U	D	U	U	U	D	U	U

Connecting Fueling Components to the FSC

Petro-Net from other components of a System2 -- the fueling terminals, and the pump control -- comes together at a Petro-Net junction box (*Figure 6*, *Figure 7*, and *Figure 8*).

A "Petro-Net Cable" is supplied with the FSC. Connect the "loose ends" of the Petro-Net cable to the Petro-Net junction box. Plug the DIN connector end of the Petro-Net Cable into the PETRO NET socket on the FSC. See *Figure 5*.

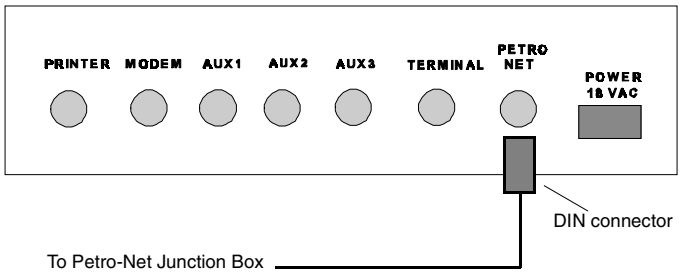


Figure 5: Attaching Petro-Net Cable to the FSC

Connecting Peripherals to the FSC

Note

Your PC must be running terminal emulation software for you to communicate with the System2 via computer.

Modem

To communicate with the FSC remotely via telephone lines, you need the Pacific Pride-supplied modem and the WTI box that is shipped with Comdata components.

Connect the modem to the WTI box by plugging one end of the RS-232 25-pin cable into the CONTROL port of the WTI box.

Connect the FSC to the WTI box: Attach the 6-pin end of a 1444-R5/PTR-R5 cable to the TERMINAL socket of the FSC. Attach the other end of the cable to a null modem adaptor. Connect the adaptor to WTI PORT 1.

After establishing connection with the modem, issue a CTRL Y 1 command to activate WTI PORT 1 and communication with the FSC.

Bank Card Retrofits

Optional hardware and software is available to let SYSTEM2 accept bank cards such as VISA and Master Card.

To communicate with the bank computer (for transaction approval, data downloads, etc.), the FSC connects to a network modem, which is connected to a seperate, dedicated telephone line. For these types of installations, connect the interface device to the AUX3 socket on the FSC.

Universal Pump Controller Option

With optional Universal Pump Control (UPC) software, the FSC can authorize fueling transactions via a pump control console like those used in a self service station.

Note

Pumps controlled by a UPC/console do not require a Petro Vend PCT.

Sample Sites

The three illustrations in this section show typical sites for the three types of pump control that can be installed for **SYSTEM2**:

- Pump controller inside the C/OPT pedestal
- Pump controller in an indoor cabinet
- No pump controller -- FSC has UPC software and pump control console

Figure 6 shows a site where the pump control PC board, and associated pump relays, are in the C/OPT enclosure and pedestal.

The C/OPT can be no further than 5,000 feet from the Fuel Site Controller. *Power the C/OPT and FSC from the same circuit breaker*.

Figure 7 shows a site installation where the pump control board and pump relays are in a separate, indoor cabinet.

Warning

If power is run with pulser wires, THE PULSER WIRES MUST BE SHIELDED. If *non*-shielded pulser wire is used, it must be in its own metallic conduit.

Figure 8 shows an installation with a pump console driven by Petro Vend UPC pump control software. With this software, the FSC can authorize fueling transactions via a pump control console (such as used in a self service station). Pumps controlled by the FSC/UPC and a console do not require separate pump control circuitry.

Warning

Shielded cable is *not* vapor-tight! For seal-offs, strip the cable jacket so about three inches of non-jacketed cable extends past each seal-off. Place the stripped section in the seal-off area. Be careful not to damage the shield wire!

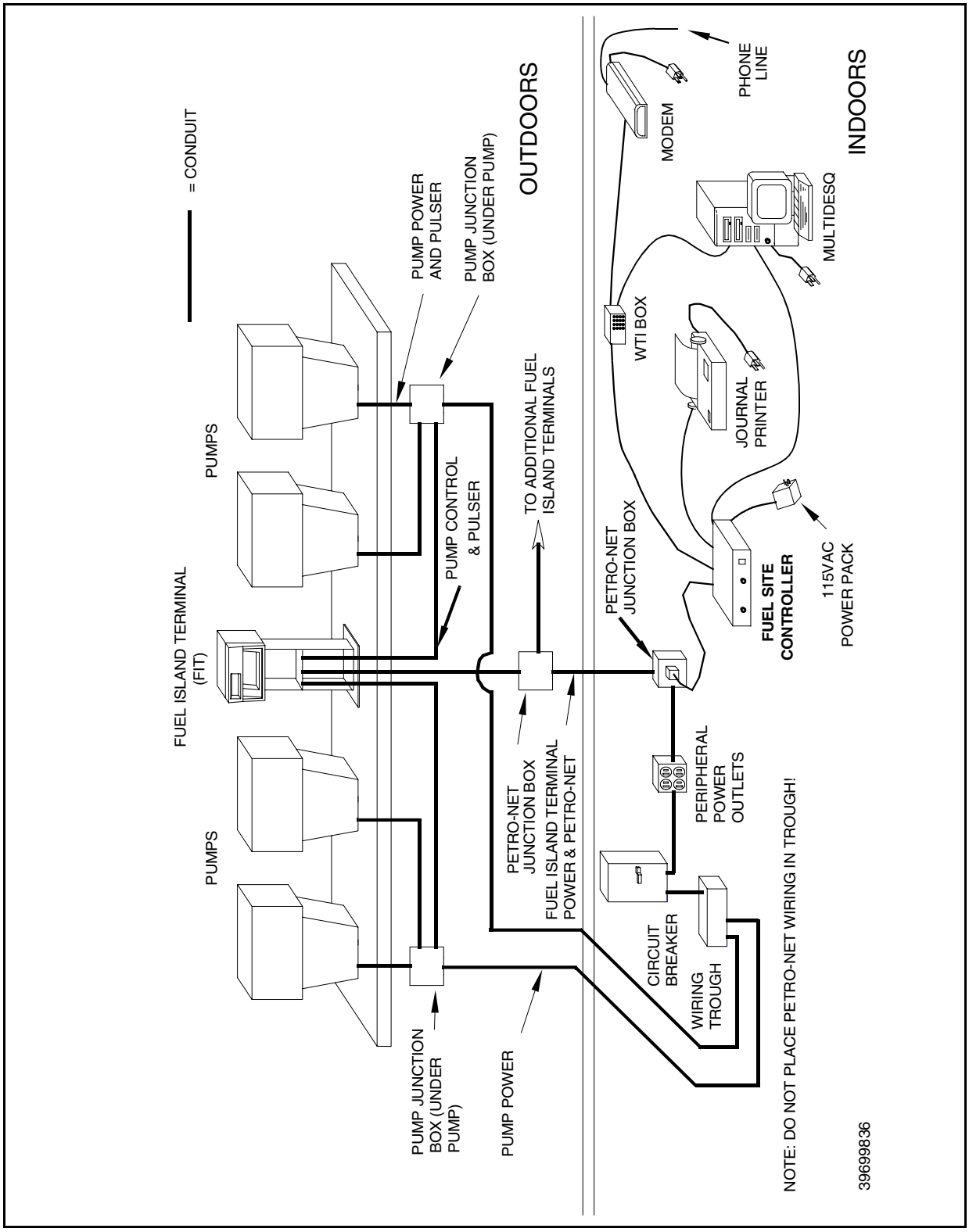


Figure 6: Site With Pump Control Inside Fueling Terminal Cabinet

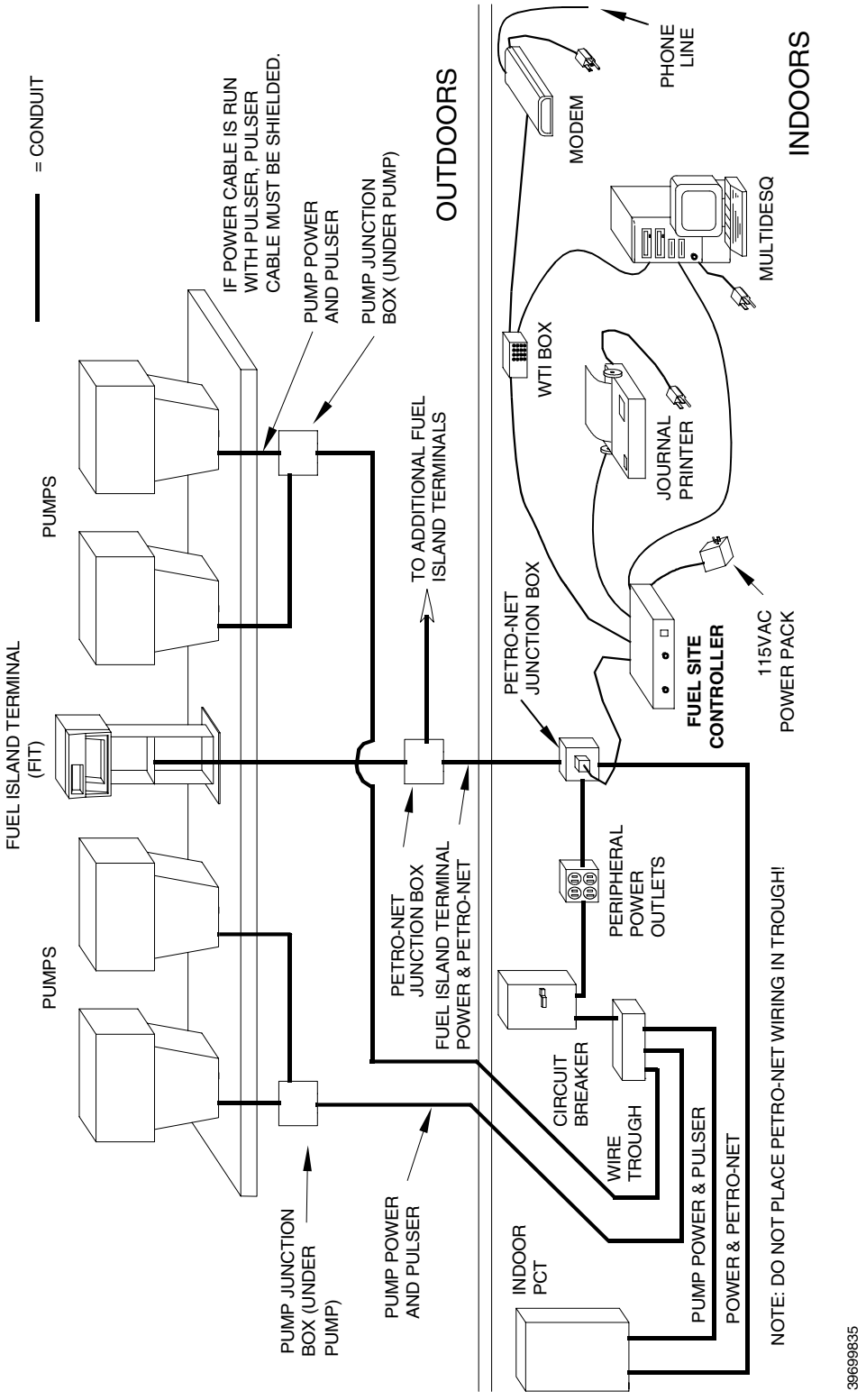


Figure 7: Site With Pump Control in Separate Cabinet

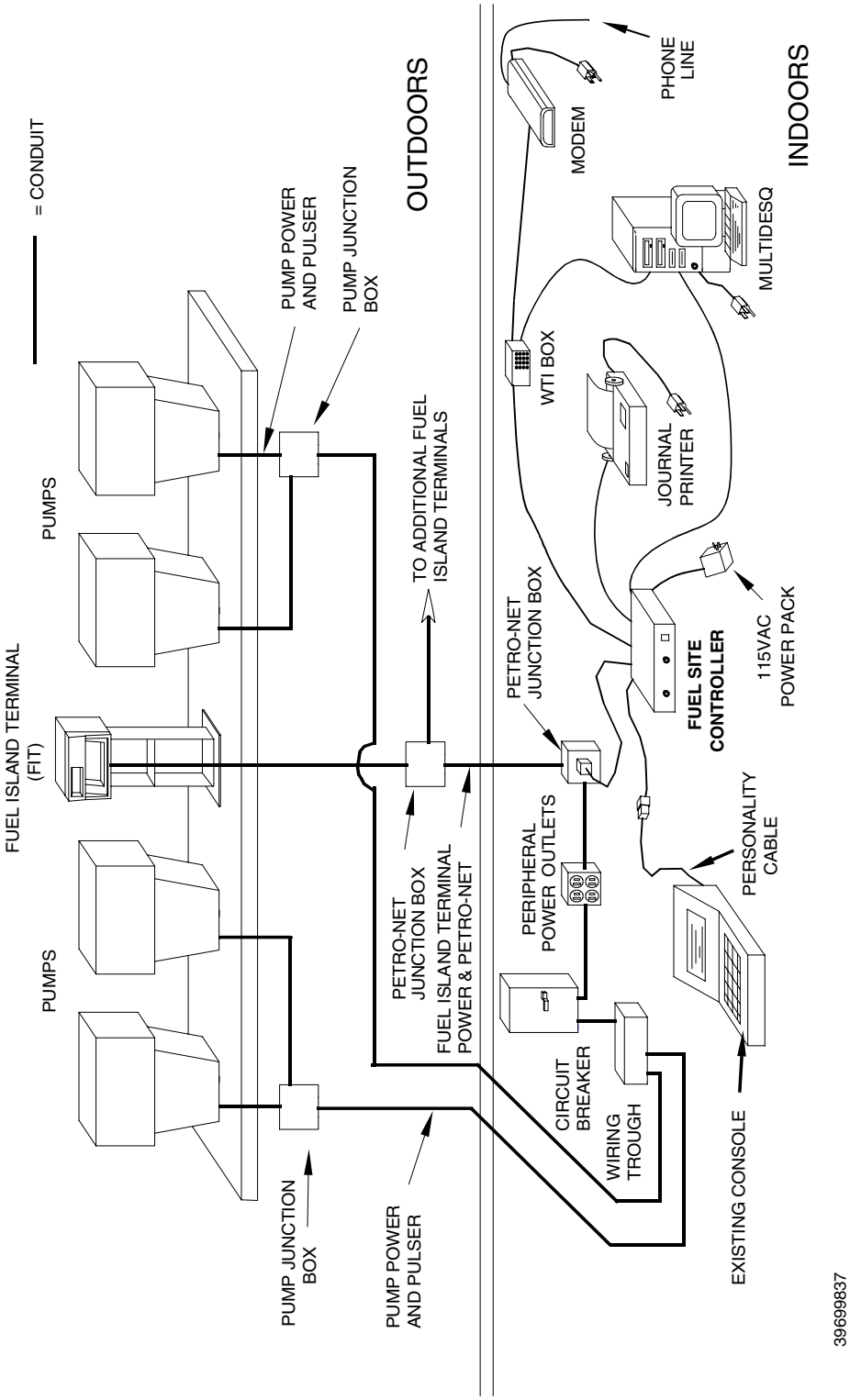


Figure 8: Site With Universal Pump Controller

Configuring the FSC

Note

*Plug in the battery **before** configuring the FSC.*

Program a default fueling terminal message and set baud rate via DIP switches on the FSC PC board (*Table 2* on *page 8*).

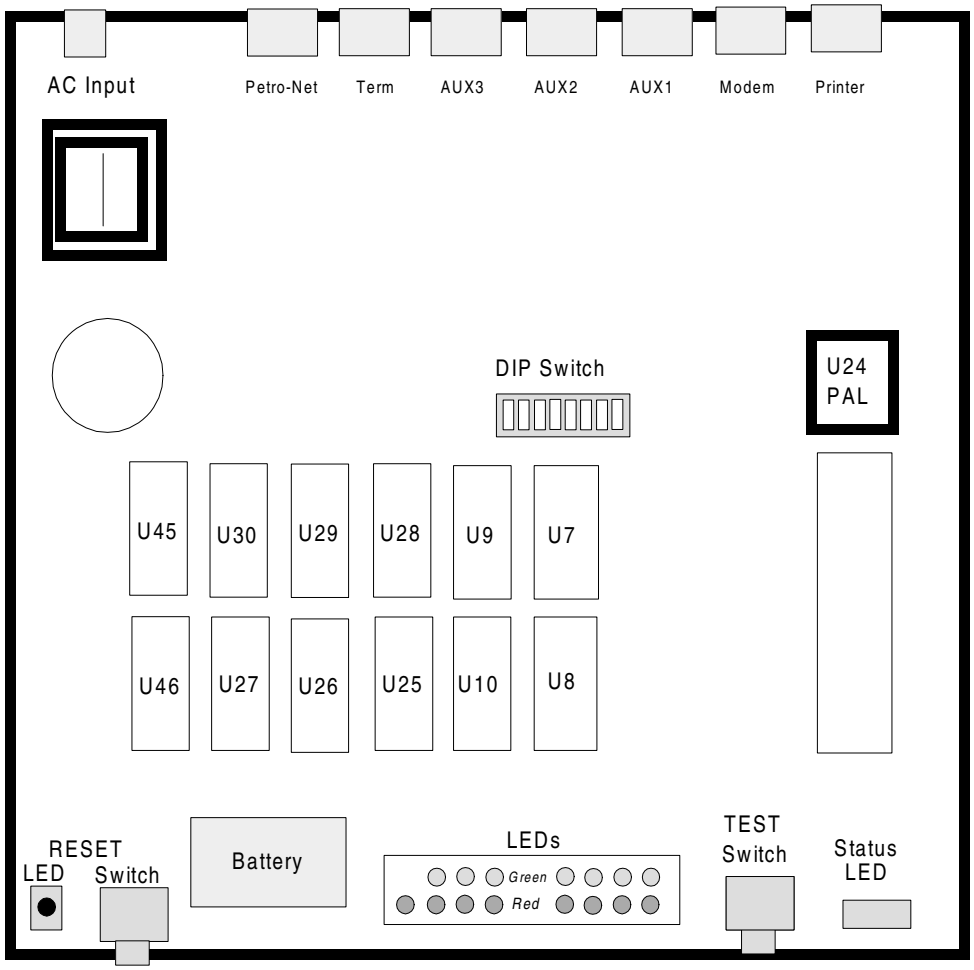


Figure 9: FSC PC Board

FSC DIP Switches

The DIP switch "SW1" on the FSC board controls several FSC settings.

Note

Positions 3, 4, 5, and 8 of SW 1 are not used. Leave them OPEN.

Positions 1 and 2: Display Type

Switch #1, positions 1 and 2, determine default display messages.

Table 4: Fueling Terminal Display Type Setup

Display Type	SW POS 1	SW POS 2
2 x 16	OPEN	OPEN
1 x 40	OPEN	CLOSED
Graphical	CLOSED	OPEN

Note

For a display change to be visible, issue a FORMAT DISPLAY DEFAULT command after changing the display type switches.

Positions 6 and 7: Baud Rate

Set the FSC baud rate with Positions 6 and 7 of DIP Switch #1. See *Table 5*.

Table 5: FSC Baud Rate Setup

Baud Rate	SW1 POS 6	SW POS 7
300	OPEN	OPEN
1200	OPEN	CLOSED
2400	CLOSED	OPEN
9600	CLOSED	CLOSED

Note

The baud rate of the FSC, all fueling terminals and all pump controllers must be the SAME! Make sure the computer or terminal (and modem) communicating with the FSC uses this baud rate as well. See the instruction manuals for the fueling terminals and pump controllers to change baud rate for those devices.

If you experience communication problems with very long runs of Petro-Net cable (approaching the 5,000 foot limit), try decreasing the baud rate.

Switch 1 does NOT affect the Petro-Net baud rate, or the baud rate of any other system port.

FSC Port LEDs

Sixteen LEDs on the FSC board show the current state of each FSC port, as shown in *Table 6*.

Table 6: FSC Port Indicator LEDs

LED Function	LED Color	LED Label
PRINTER port transmitting	Red	CR32
PRINTER port receiving	Green	CR37
MODEM port transmitting	Red	CR80
MODEM port receiving	Green	CR85
AUX1 port transmitting	Red	CR35
AUX1 port receiving	Green	CR40
AUX2 port transmitting	Red	CR41
AUX2 port receiving	Green	CR39
AUX3 port transmitting	Red	CR36
AUX3 port receiving	Green	CR38
TERMINAL port transmitting	Red	CR81
TERMINAL port receiving	Green	CR86
PETRO-NET port transmitting	Red	CR23
PETRO-NET port receiving	Green	CR22
PETRO-NET port TX enabled	Yellow	CR24
RESET	Yellow	CR31

System Start-Up

To power up the system, apply power to all fueling terminals and, if applicable, each remote pump controller. Make sure the FSC power supply is plugged into an AC socket.

Note

Do not apply power to your pumps yet.

Cold-Starting the FSC

1. With power ON, unplug the battery connector from the FSC PC board.
2. Press and hold the FSC TEST button, then press (do not hold) the RESET button.

- A "C" appears in the FSC display.

3. Release the TEST button, and reconnect the battery.

The FSC now enters the communication default mode described in the next section.

When the system is cold-started, it "installs" (establishes a communication link with) the first fueling terminal and the first two pump positions in the pump controller.

Note

The FSC downloads default (pre programmed) values for messages, fuel types, pump numbers, and several other settings.

The front-panel STATUS display sequences for about 45 seconds. During this time, the FSC counts the number of fueling terminals and indoor pump controllers installed and communicating with the FSC via Petro-Net. The resulting number is displayed as two numbers flashed in sequence.

Example

If eight fueling terminals are connected and operational, the single-digit LED display shows "0", quickly followed with "8". After a pause, the sequence repeats.

The blinking decimal point in the STATUS display indicates that Petro-Net is active.

VisaNet Host Settings

If your FSC software is VisaNet-enabled (***page 3***), you must perform this setup. If not, turn to ***page 31***.

Host Functions

Issue the **SET HOST** command at the privileged prompt for the following screen:

```
1  - MERCHANT INFO
2  - HOST CONFIGURATION
3  - VALID HOST CARDS
4  - PERFORM A CREDIT
X  - EXIT
```

Merchant Info

Select 1. Follow the prompts, entering data as you go. The entries shown represent maximum lengths and required formats. For example, the MERCHANT NAME can be up to 25 characters long.

Note

The Merchant Name, Merchant Location and Merchant State MUST be UPPERCASE entries.

```
ENTER MERCHANT NAME          : XXXXXXXXXXXXXXXXXXXXXXXXX
ENTER MERCHANT LOCATION      : XXXXXXXXXXXXX
ENTER MERCHANT LOCATION #    : 00001
ENTER MERCHANT STATE         : IL
ENTER MERCHANT CITY ZIP CODE: 00001
ENTER MERCHANT COUNTRY CODE ('840' for U.S.): 840
ENTER MERCHANT CURRENCY CODE ('840' for U.S.): 840
ENTER MERCHANT CATEGORY      : 5999
ENTER MERCHANT NUMBER        : 999999999911
ENTER AGENT NUMBER           : 111111
ENTER ACQUIRER BIN #         : 401205
ENTER CHAIN NUMBER           : 000000
ENTER STORE #                : 0011
ENTER TERMINAL #             : 9911
ENTER TERMINAL ID            : 00000001
ENTER TIME ZONE*             : 706
```

*Enter 705 for Eastern, 706 (Central), 707 (Mountain) or 708 (Pacific).

- *All information must be supplied by the merchant bank.*

Host Configuration

Host information includes phone numbers, time-outs, authorizations, and pump validation. Select 2 from the Host screen. Then, follow the prompts. The following replies show length and proper format for your replies.

```
ENTER HOST PHONE #: 9,1-999-999-9999 ("9," for outside line)
ENTER HOST AUTH TIME-OUT (secs):  60
ENTER AUTHORIZATION AMOUNT:  $50
  ENTER LIST OF VALID PUMPS (Y/N)? Y
  ENTER VALID PUMPS (p1,p2, ...)
    ->1,2,3,5,9,12
      --ANY MORE PUMPS (Y/N)? N
  ENABLE HOST PROCESSING (Y/N)? Y
```

The final "Y" entry is what actually allows System2 to process your Visa-Net transactions.

Valid Host Cards

Selection 3 in the Host Screen lets you specify which bank cards will be recognized by the system. Specify VALID or INVALID for each of the card types. Factory default is VALID for all.

The first part of the display tells you current settings:

```
VISA            -VALID
MASTERCARD      -VALID
DISCOVER        -VALID
AMEX            -VALID
DINERS          -VALID
CARTE BLANCHE   -VALID
```

To invalidate, enter "N." To validate, enter "Y."

```
VISA            -VALID (Y/N)? y
MASTERCARD      -VALID (Y/N)? y
DISCOVER        -VALID (Y/N)? y
AMEX            -VALID (Y/N)? y
DINERS          -VALID (Y/N)? y
CARTE BLANCHE   -VALID (Y/N)? y
```

Perform a Credit

To review and credit individual transactions, select 4 from the Host screen.

First, enter a transaction number:

```
ENTER TRANS #: 19
```

Review the following information:

```
SEQUENCE #..... 19
TRANSACTION TYPE..... HOST
DATE..... JAN 31, 1999
TIME..... 02:10 AM
TRANSACTION #..... 19
CARD#..... 3904567890123456=99011234  CARTE
BLANCHE
FUELTYPE..... UNLEADED
PUMP #..... 1
QUANTITY..... 55.555 GALLON
PRICE.....$1.116
TOTAL.....$62.00
RECEIPT..... NOT ISSUED
HOST TRANSACTION..... OFFLINE - NOT CAPTURED BY HOST
BATCH  RETRIEVAL  ACI  AUTH  RESP  APPROV  ADRS  MKT  VALID  TRACE  NTWK
001             N    6                 0              000000

CREDIT THIS TRANSACTION (Y/N)? Y
DONE
```

You cannot do this command to a transaction already credited. Also, a new transaction is generated when this command is performed.

Receipt Layout

Enter the non-privileged **SHOW RECEIPT** command for a breakdown of a receipt. More information on receipts is in *Receipts* on page 63.

One important difference between a “regular” and a VisaNet network receipt is that three fields - RETRIEVAL, BATCH# and TRACE# (codes 18, 19 and 20) - must be programmed for host transactions.

```
| CARD #:          |  <--rcp code: 1
| CARD #2:         |  <--rcp code: 2
| TRANS #:         |  <--rcp code: 3
| PRODUCT:         |  <--rcp code: 4
| QUANTITY:        |  <--rcp code: 5
| PR/UNIT: $       |  <--rcp code: 6
| TOTAL:   $       |  <--rcp code: 7
| DRIVER:          |  <--rcp code: 8
| VEHICLE:         |  <--rcp code: 9
| ACCOUNT:         |  <--rcp code: 10
| SITE I.D.:       |  <--rcp code: 11
| MISC:            |  <--rcp code: 12
| ODOM:            |  <--rcp code: 13
| M.P.G.:          |  <--rcp code: 14
| LPHKM:           |  <--rcp code: 15
| PUMP #:          |  <--rcp code: 16
| ACCOUNT #:       |  <--rcp code: 17
| RETRIEVAL:       |  <--rcp code: 18
| BATCH #:         |  <--rcp code: 19
| TRACE #:         |  <--rcp code: 20
```

Batches

A 'batch' is a transaction grouping. A batch can be closed in one of the following ways:

- A certain number of transactions has completed
- A new batch is opened
- The site manager decides to manually close out a batch.

When a batch closes, the System2 FSC calls the host and downloads the transactions belonging to that batch.

Set batch conditions as follows. You must be in Privileged mode.

```
p>SET BATCH
  ENTER MAX # of TRANSACTIONS PER BATCH: 50
  ENTER TIME TO OPEN NEW BATCH: 12:00 AM
  FORCE BATCH STATUS TO 'CLOSED' (Y/N)? N
```

Use SHOW BATCH to view batch summaries. Here's a sample batch:

```
p>SHOW BATCH
  -MAX # of TRANSACTIONS PER BATCH: 100
  -TIME TO OPEN NEW BATCH: 12:00 AM

BATCH NUMBER: 1  ** CLOSED -SENT TO HOST **
BATCH DATE: JUL 8, 1999   NUMBER OF TRANSACTIONS: 5
BATCH TOTAL: $55.23
   NO CREDITS

BATCH NUMBER: 2  ** CLOSED -SENT TO HOST **
BATCH DATE: JUL 9, 1999   NUMBER OF TRANSACTIONS: 23
BATCH TOTAL: $255.17
   NO CREDITS



BATCH NUMBER: 3  ** CLOSED (not sent to host) **
BATCH DATE: JUL 14, 1997   NUMBER OF TRANSACTIONS: 17
BATCH TOTAL: $207.33
   NO CREDITS

BATCH NUMBER: 1  ** NOT CLOSED **
BATCH DATE: JUL 15, 1997   NUMBER OF TRANSACTIONS: 12
BATCH TOTAL: $132.47
   NO CREDITS
```

Visanet Journal Printout

The following is output on your journal printer when System2 prints VisaNet transactions. For more journal printer information see *Journal Printer Commands* on page 109.

Note the “two-tiered” structure of the record. The second row header (AMOUNT BATCH RETRIEVAL ACT AUTH RESP APPROV VALID TRACE NTWK) contains all your VisaNet host settings.

```
DATE  TIME TRN# T IDENTITY  VEH#   CARD#    MISC     ODOM   PMP# PR QUANTITY
------ ---- ---- - --------- ----- ------- --------- ------- ---- -- ---------
062797 0123 1234 I    DRIVER 35363 3334353  39393939   12345  1-2 10    12.347
072797 0123 1234 I 123456789                39393939   12345  1-2 10    12.347
 AMOUNT   BATCH   RETRIEVAL    ACI  AUTH  RESP  APPROV  VALID  TRACE  NTWK
 $16.04    002    1234567890    Y    A     RR   APPROV  VVVV   000333  N
```

Configuring the FSC for the Pacific Pride Network

Use this section only if your FSC software is enabled for SmartLock. .

The following are step by step instructions to configure your SmartLock™ C/OPT Fuel Site Controller for use in the Pacific Pride network. To configure the SmartLock™ C/OPT Fuel Site Controller you must be in privileged mode.

Communications can be established through a modem, modem/WTI switch box, or a laptop computer.

After communication has been established press <Enter>. If a ">" prompt is not achieved a "Ctrl-Y" and "1" may need to be entered to gain access through the WTI switch box.

Once a ">" prompt is achieved, to command the SmartLock™ C/OPT Fuel Site Controller to enter privileged mode, key "HELLO" and press <Enter>.

You will be prompted with the message, "ENTER MAIN PASSWORD:" key "HELLO" and press <Enter>. You should now be in privileged mode ("P>"). Note: later on you will have the opportunity to change the passwords. Once changed, you must use the new password at this prompt.

Once in privileged mode, you can begin the system configuration.

For more information about these prompts, please refer to your Petro Vend System 2 Automated Fueling Management User's Manual, Pacific Pride Multiple Network Version.

STEP	SmartLock™ C/OPT Fuel Site Controller Prompt	Response
1	P> SET RAM OPTIONS: 0 – STD (level 1) 1 – EMA (level 2) 2 – EMB 3 – EMC (level 3) 4 – EMD (level 4) 5 – EME ENTER OPTION:3 CURRENT OPTION: EMC (LEVEL #3)	
2	P> SET TIME	

```
   ENTER TIME (XX:XX  AM/PM):As prompted or in military
time in HHMM format. EXAMPLE: 3:47 in the afternoon can be
entered as "3:47 PM" or as "1547".
```

3 `P> SET DATE`

```
   ENTER DATE (MMM DD, YYYY):Enter date as prompted.
      EXAMPLE: OCT 15, 2001
   OCT 15, 2001          03:47  PM
```

4 `P> SET TIME CHANGE`

This is to set the dates standard time advances to daylight savings and vice versa. If you don't have the dates, you may bypass this step.)

```
ENTER DATE WHEN TIME IS
MOVED BACK 1 HOUR:
```

This is the date in the Fall that daylight savings time reverts to standard time. Enter the date in the same format as you did in the "SET DATE" command above.

```
ENTER DATE WHEN TIME IS
MOVED FORWARD 1 HOUR:
```

This is the date in the Spring that standard time becomes daylight savings time. Enter the date in the same format as you did in the "SET DATE" command above.

5 `P> SET SITE ID`

```
ENTER SITE ID   (12 chars):
```

The Site ID is the Site code specifically assigned to each site in a letter from Pacific Pride. Each site has a different code. Please contact the site owner to obtain this code.

EXAMPLES: Site code W7 would be entered as "W7.PAC.PRIDE".

Site code ADG would be entered as "ADGPAC.PRIDE".

Be sure to use upper case letters.

**** IMPORTANT *** Be sure to record the site ID you have entered here in the Site ID field in the site file maintenance of your Pacific Pride Controller.*

6 P> SET QUANT RESTR

```
QUANTITY RESTRICTION CODES:
```

Values represent dollars) OR (values represent quantities)

```
CODE  0 :   NO RESTRICTIONS
CODE  1 : $20
CODE  2 : $30
CODE  3 : $50
CODE  4 : $250
CODE  5 : $450
CODE  6 : $120
CODE  7 : $140
CODE  8 : $160
CODE  9 : $180
CODE  10 : $200
CODE  11 : $220
CODE  12 : $240
CODE  13 : $260
CODE  14 : $280
CODE  15 : $300

QTY RESTRICTION VALUE OPTIONS (Y/N)?Y
   - USE VALUES AS $ (Y/N)?N
```

VALUES ARE QUANTITIES

7 P> SET FUELING UNITS

```
ENTER FUELING UNIT  1 :GALLON

ENTER FUELING UNIT  2 :QUART

ENTER FUELING UNIT  3 :EACH
```

8 P> SET FUELTYPE 1

```
1 : UNLEADED          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 1UNL L-SUB
```

9 P> SET FUELTYPE 2

```
2 : PREMIUM          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1

CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 2NO LEAD
```

10 P>SET FUELTYPE 3

```
3 : REGULAR          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 3DIESEL
```

11 P>SET FUELTYPE 4

```
4 : MRKD FUEL          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y

ENTER FUELTYPE 4:PREMIUM
```

12 P>SET FUELTYPE 5

```
5 : DIESEL           - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
```

```
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)2
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 5OILS
```

13 `P>SET FUELTYPE 6`

```
6 : #2 DIESEL          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1

CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 6MISC.
```

14 `P>SET FUELTYPE 7`

```
7 : GASOHOL          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 7AVIATION
```

15 `P>SET FUELTYPE 11`

```
11 : LUBE OIL          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 11ALT DIESEL
```

16
```
P>SET FUELTYPE 12

12 : LUBE OIL2          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 12MID-GRADE
```

17
```
P>SET FUELTYPE 16

16 : AIR          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)3
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 16FREE
```

18
```
P>SET FUELTYPE 17

17 : EXTRA          - - - - PRICE PER GALLON 1.000

FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
ENTER FUELING UNIT CODE (1-3)1
CHANGE PRICE (Y/N)?N
CHANGE PRODUCT NAME (Y/N)?Y
ENTER FUELTYPE 17OFF DIESEL
```

19
```
P>SET FUELTYPE 18

18 : EXTRA          - - - - PRICE PER GALLON 1.000
FUELING UNIT CODES:
          1 :  GALLON
          2 :  QUART
          3 :  EACH
```

```
   ENTER FUELING UNIT CODE (1-3)1
   CHANGE PRICE (Y/N)?N
   CHANGE PRODUCT NAME (Y/N)?Y
   ENTER FUELTYPE 18PROPANE
```

20 P>SET FUELTYPE 19

```
   19 : EXTRA          - - - - PRICE PER GALLON 1.000

   FUELING UNIT CODES:
            1 :  GALLON
            2 :  QUART
            3 :  EACH
   ENTER FUELING UNIT CODE (1-3)1
   CHANGE PRICE (Y/N)?N
   CHANGE PRODUCT NAME (Y/N)?Y
   ENTER FUELTYPE 19CNG
```

21 P>SET PROD RESTR TABLE

```
   PRODUCT RESTRICTION CODES:

   CODE  0
   LIST OF VALID PRODUCTS:
-  NO ACCESS TO PRODUCTS 17-32
      -- SPECIFY CODE 0 (Y/N/X)?N

   CODE  1
   LIST OF VALID PRODUCTS:
-  NO ACCESS TO PRODUCTS 17-32
      -- SPECIFY CODE 1 (Y/N/X)?Y
   ENTER VALID PRODUCTS (17-31)
◊17

        - ANY MORE PRODUCTS (Y/N)?N

   CODE  2
   LIST OF VALID PRODUCTS:
-  NO ACCESS TO PRODUCTS 17-32
      -- SPECIFY CODE 2 (Y/N/X)?Y
   ENTER VALID PRODUCTS (17-32)
→ 18

        - ANY MORE PRODUCTS (Y/N)?N

   CODE  3
   LIST OF VALID PRODUCTS
-  NO ACCESS TO PRODUCTS 17-32
      -- SPECIFY CODE 3 (Y/N/X)?Y
```

```
   ENTER VALID PRODUCTS (17-32)
→ 19

      - ANY MORE PRODUCTS (Y/N)?N

   CODE  4
   LIST OF VALID PRODUCTS
-  NO ACCESS TO PRODUCTS 17-32
      -- SPECIFY CODE 4 (Y/N/X)?X
```

22 P>SET JOURNAL

```
      OFFICE JOURNAL (Y/N)? Y
   JOURNAL ERROR OPTION (Y/N)? Y
   - ENABLE AUTH ON JOURNAL ERROR (Y/N)? N
```

23 P>SET PASSWORD

```
   ENTER MAIN PASSWORD:\
```

Enter five (5) letters and numbers in any combination. EXAMPLE: "12345" "ABC12" "5334D", etc.

```
   ENTER MODEM PASSWORD:enter the SAME password as above.
```

**** IMPORTANT *** Be sure to record the password you have entered here in the password field in the site file maintenance of your Pacific Pride Controller.*

The following steps must be repeated for each pump you have connected to the SmartLock™ C/OPT Fuel Site Controller. Here you define the pump number, product, time outs, etc for each pump. There can be up to four PCT's (Pump Control Terminal), each with a maximum of eight pumps. If you make a mistake, you can cancel by entering Ctrl-C (control C). If you wish to modify a configuration for a PCT and Position, merely pressing <Enter> will repeat the entries you have already made previously for that PCT and Position.

24 P>CONFIG PCT **x**

...where x is the PCT number.

```
   IS THIS A U.P.C. (Y/N)?N if not a UPC;
```

Y if this is a UPC configuration. If you answer Y to the above question the following displays will also need to be answered.

```
   IS THIS AN INTERNAL PROGRAM (Y/N)?Y
```

if your UPC is internal to the Fuel Site Controller.

N if your UPC is external to the Fuel Site Controller.

```
DOES THIS U.P.C. ALLOW
HOSE RESTRICTIONS (Y/N)?The answer should always be Y.
```

25 P>CONFIG PCT **x** POS **n**

Where x is the PCT number and n is the position the pump is connected at the PCT. EXAMPLE: to configure the 5th position on the first PCT, enter, "CONFIG PCT 1 POS 5".

```
ENTER PUMP #:
```

Enter the pump number attached to this position.

```
ENTER PULSES PER GALLON:
```

- OR –

```
ENTER PULSES PER QUART:
```

- OR –

```
ENTER PULSES PER EACH:
```

For fuel, the normal response is 10 or 100. For motor oil (5) and miscellaneous (6), 1 pulse is normal.

```
MAX FUEL TO BE DISPENSED
PER TRANSACTION
```

Enter 9999 for unlimited fuel. 300 is the recommended maximum. Set to a lower quantity if mandated by the Fire Marshall for the product.

```
PUMP SENTRY OPTIONS (Y/N)?Y
     ENABLE PUMP SENTRY (Y/N)?Y     for fuel
   N     for restrooms, oil machines, scales, etc.

PUMP SENTRY ENABLED
```

or

```
PUMP SENTRY DISABLED
MAXIMUM TIME ALLOWED FOR
FUELING (minutes):
```

Enter the number of minutes to allow product to be dispensed before the transaction is automatically terminated, usually 10 to 20 minutes. Oil machines would be substantially less.

```
MAX TIME ALLOWED TO RETRIEVE PUMP HANDLE (seconds):
```

This is usually 60 to 120 seconds.

```
MAX TIME ALLOWED TO DETECT
FIRST FUELING PULSE (seconds):
```

This is usually 60 to 90 seconds.

```
MAX TIME ALLOWED BETWEEN
FUELING PULSES (seconds):usually 60 seconds.
```

*IF YOU ANSWERED **YES** TO #24 CONFIGURE BELOW AS HOSES 1-4*

```
ENTER FUELTYPE CODE #:enter the product category:
       1 = UNL L-SUB
       2 = NO LEAD
       3 = DIESEL
       4 = PREMIUM
       5 = OILS
       6 = MISC.
       7 = AVIATION
      11 = ALT DIESEL
      12 = MID-GRADE
      16 = FREE PRODUCTS
      17 = OFF ROAD DIESEL
      18 = PROPANE
      19 = CNG

ENTER TANK #:enter tank # (1-9)

CLEAR PUMP TOTALS (Y/N)?Y
          - - CLEARED

ENTER TOTALIZER VALUE:
```

Enter the current totalizer value.

26 P>INSTALL PCT **x** POS **n**

Where x is the PCT number and n is the position the pump is connected at the PCT selected at the beginning of this step.

```
OKAY
```

NOW REPEAT THIS STEP FOR EACH ADDITIONAL PUMP.

27 P>INSTALL PCT 1

```
OKAY
```

28 P>INSTALL PCT 2 (if you configured a 2nd PCT)

```
OKAY
```

29 P>INSTALL PCT 3 (if you configured a 3rd PCT)

OKAY

30 P>INSTALL PCT 4 (if you configured a 4th PCT)

OKAY

31 P>CONFIG FIT **n**

Where n is the Fuel Island Terminal (reader) number installed. Repeat this command for each FIT installed.

```
ISSUE RECEIPTS (Y/N)?Y
    - ENTER LIMIT TO RECEIVE RECEIPTS IN DAYS:1
    - CLEAR RECEIPT COUNTER (Y/N)?Y
SPECIFY PCTs TO SHUTOFF ON E-STOP (Y/N)?N
CHANGE FIT ACCESS TO PUMPS (Y/N)?N

FIT INSTALLED
FIT INFO:

RECEIPTS:     0        1 DAY LIMIT TO RECEIVE RECEIPT
KEYBOARD ACCESS  - - DISABLED
PCTs TO SHUT OFF ON E-STOP: 1, 2, 3, 4
CARD READER ERROR COUNTER:   0
COMMUNICATION ERROR COUNTER:   0
ACCESS TO ALL PUMPS
```

32 P>INSTALL FIT 1

33 P>INSTALL FIT 2 (if you configured a 2nd FIT)

34 P>INSTALL FIT 3 (if you configured a 3rd FIT)

35 P>INSTALL FIT 4 (if you configured a 4th FIT)

36 P>FORMAT RECEIPT HEADER

```
   12345678901234567890
|                                |
line 1 ->        WELCOME TO
    - red print (Y/N)?Y
line 2 ->       PACIFIC PRIDE
    - red print (Y/N)?Y
line 3 ->press <Enter>
```

37 P>FORMAT RECEIPT

You can define what transaction data is to be printed on the receipt and in what order. The first 10 character positions of a line are filled in by you. Press <Enter>, then you will specify a receipt code to print data from the transaction on the same line. Listed is an example of information that should be included on your receipt. Refer to your Petro Vend System 2 Automated Fueling Management User's Manual, Pacific Pride Multiple Network Version for other fields that can be printed.

```
Line 1: CARD #1:receipt code (#,-): 1
Line 2: CARD #2:receipt code (#,-): 2
Line 3: TRANS #:receipt code (#,-): 3
Line 4: PRODUCT:receipt code (#,-): 4
Line 5: QUANTITY:receipt code (#,-): 5
Line 6: PR/UNIT:receipt code (#,-): 6
Line 7: TOTAL:receipt code (#,-): 7
Line 8: DRIVER:receipt code (#,-): 8
Line 9: MISC.:receipt code (#,-): 12
Line 10: ODOMETER:receipt code (#,-): 13
Line 11: PUMP #:receipt code (#,-): 16
Line 12: ACCOUNT#:receipt code (#,-): 17
```

38 P>FORMAT RECEIPT TRAILER

```
   12345678901234567890
|                                |
line 1 ->        THANK YOU
    - red print (Y/N)?Y
```

39 P>SET CARD

```
[1] Set card/transaction buffer size
[2] Set keyboard entry options
[3] Set keyboard access type
[4] Set expiration date code table
[5] Set keyboard card control data
[return] Return to main command line
```

```
Enter choice:1

NOTE : TRANSACTION BUFFER
WILL BE CLEARED!! (Y/N)?Y

ENTER SIZE CODE80

# OF CARDS: xxxxxxx
# OF transactions:  2000

- SAVE THIS CONFIGURATION (Y/N)?Y

- - PLEASE WAIT - - wait a couple of minutes


[1] Set card/transaction buffer size
[2] Set keyboard entry options
[3] Set keyboard access type
[4] Set expiration date code table
[5] Set keyboard card control data
[return] Return to main command line

Enter choice:press <Enter>
```

40 P>SET TRANS

```
SET WRAP AROUND OPTIONSY

- ENABLE WRAP AROUNDN

REDEFINE TRANSACTION?Y

- TRANS = UNAUTHZ'D USERS ALSO? Y
```

To capture transaction denials

```
SPECIFY DISPLAYED FIELDS?Y
ENTER 'Y' TO DISPLAY FIELD:

ACCOUNT, DRIVER, VEHICLE?Y
DATE & TIME?Y
TRANS #?Y
CARD #1?Y
CARD #2?Y
FUELTYPE?Y
PUMP?Y
  HOSE?N  < - - - NO!
QUANTITY?Y
PRICE?Y
TOTAL?N  < - - - NO!
ODOMETER?Y
DISTANCE/UNIT?N  < - - - NO!
```

```
MISCELLANEOUS?Y
RECEIPT STATUS?N  < - - - NO!
ACCOUNT #?N  < - - - NO!
HOST AUTHORIZATION #?Y

   - COMPUTER FORMAT CHECK DATA IN HEADER?Y
```

ALL DISPLAYS ARE 2 LINES WITH A MAXIMUM 40 CHARACTERS PER LINE INCLUDING SPACES.

41 P>FORMAT DISPLAY DEFAULT

```
DISPLAY TYPE OPTIONS:
  0 - NO CHANGE
  1 - 2x16
  2 - 1X40
  3 - 2X40    (Graphics)3
```

42 P>FORMAT DISPLAY 8

```
      1234567890123456789012345678901234567890

   |
|^0^Z^B          WELCOME^F          TO
      ^J        PACIFIC PRIDE^T
```

43 P>FORMAT DISPLAY 9

```
      1234567890123456789012345678901234567890

   |
|^3^Z^LINSERT DRIVER CARD^T
```

44 P>FORMAT DISPLAY 24

```
      1234567890123456789012345678901234567890

   |
|^3^Z^LINSERT VEHICLE CARD
```

45 P>FORMAT DISPLAY 27

```
      1234567890123456789012345678901234567890
```

```
   |
|^5^Z^KENTER^LSECURITY #:
```

46 P>FORMAT DISPLAY 31

```
      12345678901234567890123456789012345678901
   |
|^Z^KRE-ENTER^LSECURITY #:
```

47 P>DOWNLOAD

```
   OKAY
```

48 P>SH TR CARDS=ALL CF

```
   0000/000000000/abcdefghikmp/02press <Enter>
```

**** IMPORTANT *** The letters displayed (abcdefghikmp) must be exactly as shown. If not, you must repeat step 40.*

```
   //
```

49

Refer to your Petro Vend System 2 Automated Fueling Management User's Manual, Pacific Pride Multiple Network Version for instructions on SHOW commands. With these commands, you can review your work.

50 P>BYE

```
   BYE!
```

51.

Test your site with the two Petro Vend Test Cards: Test Card #1 PIN # 8539 (black-and-white) lets you check pump operation -- it works with all products. After confirming that all the pumps are working, test your site's product restrictions with tan Test Card #2 (PIN # 5525). This card allows only unleaded fuel to be dispensed, use it to

confirm a restricted card does NOT activate a premium or diesel pump. Use the Petro Vend Test Card or one of your own restricted cards.

If you have any questions regarding your SmartLock™ C/OPT Fuel Site Controller Petro Vend equipment please call the Trendar help desk at (800) 755-5540 and ask for a Tech Rep 2.

FSC Software Overview

At power-up, System2 is in *non*-privileged mode. Enter commands using the following guidelines.

Note

If menus are ON, turn them OFF by typing SET MENU at the p> prompt, then answering NO.

SHOW. Displays information from a SYSTEM2 data base on the screen of your terminal or PC. This command does not require privileged status.

PRINT. Sends data to your external journal printer to make a hard copy. Most (but not all) information can be printed, including all setup data (cards, fuel types, prices, etc.) and all transaction information (time, date, amount, price, cost, etc.). This command does not require privileged status.

SET (**FORMAT** and **CONFIGURE** work similarly). These commands are used to enter or change the setup data. These commands are privileged. Note that after a FORMAT or CONFIGURE command is used, one of the DOWNLOAD commands must be entered.

Other commands are listed below:

INSTALL/REMOVE - These commands activate and deactivate a pump control device. Privileged commands.

CLEAR - There are several CLEAR commands, which erase transactions from the system data base. Privileged command.

- *To enter privileged mode, either type HELLO at the ">" prompt, then enter the privileged password.*
- System Access
- System Times
- System Devices
- Customer Messages
- System Parameters
- Restrictions
- Cards/Accounts
- Transaction Data
- System Totals
- Journal Printer

Visanet Host Commands

- Merchant information
- Host configuration
- Valid host cards
- Perform a credit

System Access Commands

- OPEN
- CLOSE
- CALL
- HELLO
- BYE

Open or close the system, open a modem connection, change passwords. To access the system using a PC and/or a modem, *Appendix D - Using System2 With an External PC* on page 129.

System Times Commands (Show/Print/Set)

- TIME
- TIME CHANGE
- DATE
- SYSTEM ON TIME
- LIGHT ON TIME

Use System Times commands to set real time and date, daylight savings time day, time to turn the keyboard lighting ON or OFF, and time to open and close the site.

System Devices Commands (Show/Print/Install/Remove/Configure/Download)

- C/OPT #
- PCT #
- PCT #/POSITION #
- PUMP #
- PROGRAM

The System Devices commands (*page 57*) lets you program the C/OPTs, the pump controls and the optional UPC (Universal Pump Controller)-equipped pump control.

- C/OPTs. The Commercial/Outdoor Payment Terminals include the card/key reader(s), keyboard, display and optional /receipt printer.
- PCTs. Pump Control Terminals are either in the C/OPT pedestal or in a separate cabinet. Each PCT defines up to eight pumps. See the Petro Vend *PCT User Guide* (Petro Vend manual # *M47-00.01)* for more details.
- UPC. The UPC can emulate up to four PCTs for operation with a self-service console. The option lets your system connect to a site console,

which provides *simultaneous* unattended *and* self service fueling. For complete details on UPC operation, refer to the appropriate Petro Vend UPC *Operator Guide*.

Customer Messages Commands (Show/Print/Format)

- RECEIPT BODY
- RECEIPT HEADER
- RECEIPT TRAILER
- RECEIPT BONUS POINTS
- DISPLAY (#...)
- KEYBOARD (#...)
- MESSAGES
- DATE

The Customer Messages commands (*page 63*) lets you define receipt formats and bonus points, display or edit prompts and keyboard responses, create personalized customer messages, change the date/time format.

System Parameters Commands (Show/Print/Set)

- SYSTEM
- SITE ID
- FUELTYPE (#...)
- FUELING UNITS
- LANGUAGE
- PASSWORD
- BYPASS
- MENU (ALWAYS OFF)
- ECHO
- BONUS POINTS
- RAM
- VERSIONS

Current Configuration, this site ID, fuel types and units of measure, passwords, bypassing, programming system to issue bonus points for loyalty programs, and defining the amount of RAM in your FSC.

Restrictions Commands (Show/Print/Set)

- PUMP RESTRICTIONS
- QUANTITY RESTRICTIONS
- SECURITY

Show, print or set PUMP RESTRICTIONS, QUANTITY RESTRICTIONS and SECURITY features like PINs.

Cards Commands (Show/Print/Set/Validate/Invalidate/insert/Edit/Delete)

- CARD

Show, print, set, validate or invalidate cards and ISO numbers.

Transaction Data Commands (Show/Print/Set/Clear.)

- TRANS DATE TIME CARD ACCOUNT VEHICLE
- TRANS DATE TIME CARD ACCOUNT VEHICLE SUMMARY
- TRANS
- TRANS DATE #... SEQUENCE #...

Manipulate individual transactions by date, time, card number,or vehicle

System Totals (Show/Print/Set/Clear)

- TRANS DATE TIME CARD ACCOUNT VEHICLE
- TRANS DATE TIME CARD ACCOUNT VEHICLE SUMMARY
- MIDNIGHT
- DAY
- SHIFT
- PUMP #... TOTALS
- PCT #... TOTALS
- FUELTYPE (#...) TOTALS
- TANK (#...)

Summarize monetary and quantity figures by transaction, day, shift, till midnight, by pump totals, PCT totals, fuel types, tank.

Journal Printer (Show/Print/Set/Lock/Unlock)

- JOURNAL PRINTER

Define or lock or unlock the journal printer attached to your FSC.

System Access Commands

OPEN
CLOSE
HELLO
BYE
CALL
PASSTHRU

Open/Close

The **OPEN** and **CLOSE** commands give immediate access to pumps. Both commands are privileged, requiring the main password.

When a **CLOSE** command is issued, all activities in progress (pumping, printing a receipt, etc.) complete normally but no new activities are allowed to begin.

Hello/Bye

HELLO is used to access the privileged mode. You'll be prompted for the system password (see *page 88*) -- the factory-set password is HELLO).

BYE exits the privileged mode.

You MUST enter main password to enter Privileged mode. To return to Normal mode from the command line **p>** prompt, type **BYE**.

Call

The **CALL** command creates a virtual link between the TERMINAL port and the MODEM port on the FSC.

Before executing the **CALL** command, connect a modem and terminal (see *Appendix C - Using System2 With a Modem* on page 127) to the MODEM and TERM ports, respectively. After executing **CALL**, use a terminal connected to the FSCTERM port to issue dial-out commands directly to the modem.

To break the connection, type **BYE**.

System Time and Date Commands

```
SHOW TIME, SET TIME, PRINT TIME
SHOW TIME CHANGE, SET TIME CHANGE, PRINT TIME CHANGE
SHOW DATE, SET DATE, PRINT DATE
SHOW SYS TIME, SET SYS TIME, TIME ADJ
SHOW LIGHT, SET LIGHT
```

Time Commands

The **SHOW TIME** or **SET TIME** command displays or sets the current time of day. The **SET TIME** command changes time as follows:

1. SET TIME [ENTER]
2. TIME [ENTER]
3. Enter the time in the format HH:MM AM or PM. For example, 12:57 PM. If PM is not specified, AM is assumed.
4. Press [ENTER] to complete the entry; this sets seconds to zero. The new time and current (or default) date are displayed.

- Press [ENTER] to leave the current time unchanged.

Time Change (Daylight Savings) Commands

The **SHOW TIME CHANGE** command displays change dates in the system. The **SET TIME CHANGE** command changes the dates as follows:

1. After issuing the command you are prompted:
   `ENTER DATE WHEN TIME IS MOVED BACK 1 HOUR:`
2. Enter the "move-back" date in the format MMM DD YYYY (the year must be four digits). Press [ENTER]. The following prompt appears:
   `ENTER DATE WHEN TIME IS MOVED AHEAD 1 HOUR:`
3. Enter the "move ahead" date in the same way.

- *The change occurs at 2:00 AM on the date specified.*

Date Commands

The **SHOW DATE** or **SET DATE** command displays or sets the current date within the system's memory. After issuing the command you are prompted to enter a date: ENTER DATE (MMM DD, YYYY):

1. Enter the date in the indicated format (for example, type FEB 11, 2000 for February 11th, 2000.
2. Press [ENTER] to complete the entry; the new date is now displayed.

- *Press [ENTER] with no entry to leave the current date unchanged.*

System ON/OFF Commands

The **SHOW SYS TIME** and **SET SYS TIME** commands display or set the time the system goes ON and OFF, and the time during which "transactions in progress" are allowed (the "receipts only" time).

SET SYS TIME command lets you set the following four options (time for the first three is entered in the same format as for System Time - hh:mm).

- **SYSTEM ON TIME** - When SYSTEM2 goes active. When the system is on, it displays messages, and accepts card insertions or keypad entries.
- **SYSTEM OFF TIME** - specifies when the system goes inactive. No new transactions are allowed to begin, but any in progress are allowed to finish.
- **RECEIPTS ONLY TIME** - When system allows no new transactions, but does allow "just completed" customers to get their receipts. This time would typically precede the `SYSTEM OFF TIME' by several minutes.

For example, a gas station that dispenses fuel from 9:00 AM until 7:00 PM would have the `SYSTEM ON TIME' set to 9:00 AM, the `SYSTEM OFF TIME' set to 7:10 PM and the `RECEIPTS ONLY TIME' set to 7:00 PM.

TIME ADJ allows a software adjustment to the internal time clock. In the event of a noticeable time drift, a number of seconds can be added to or subtracted from each day, until a proper hardware adjustment can be made.

Light ON/OFF Time Commands

The **SET LIGHT** command lets you set the SYSTEM2 to turn the "pocket" lights in the C/OPT ON and OFF at designated times.After selecting this option, the following prompts appear:

```
ENTER LIGHT ON TIME:
ENTER LIGHT OFF TIME:
```

Enter time in the same format as that for SYSTEM ON TIME.

System Devices Commands

SHOW FIT#, PRINT FIT#, INSTALL FIT#, REMOVE FIT#, CONFIGURE FIT#

SHOW PCT, PRINT PCT, INSTALL PCT, REMOVE PCT, CONFIGURE PCT
SET PUMP ON
DOWNLOAD
DOWNLOAD FIT (#..)
DOWNLOAD PCT (#..)

This section describes the System Devices commands by explaining each of the available options: FIT (C/OPT) #, PCT #, PCT #/Position #, Pump # and Program.

Commands applicable to each option are described in each section.

C/OPT Commands

The **SHOW, PRINT, INSTALL, REMOVE** and **CONFIGURE FIT #** commands let you view, configure, install or remove C/OPTs, and determine if the receipt printer will issue receipts, whether the keyboard is enabled or disabled, which PCTs to shut off when the emergency stop button is pressed, and reset the card reader error counter.

The C/OPT number is set with a DIP switch on the PV-269 board - refer to the *C/OPT User's Manual* to set the number.

Show Current C/OPT Status

Issue a **SHOW FIT #** command with a C/OPT number to see how that FIT is set up:

```
FIT INSTALLED
NO RECEIPTS
KEYBOARD ACCESS - DISABLED
PCTs TO SHUT OFF ON E-STOP: 1,2,3,4
CARD READER ERROR COUNTER: 0
-- ACCESS TO ALL PUMPS
```

Entries vary depending on current settings.

Configure C/OPT

The **CONFIGURE FIT #** command changes these settings.The following prompts appear one by one after using CONFIGURE FIT #:

- `ISSUE RECEIPTS (Y/N)?` - Enter Y to have the optional receipt printer issue a receipt (N is default).If you enter (Y) to the ISSUE RECEIPTS? prompt, two additional prompts appear...
- `ENTER LIMIT TO RECEIVE RECEIPT IN DAYS (0..99)` - this is the number of days after a transaction that a customer can receive a receipt. Default is NO LIMIT.
- `CLEAR RECEIPT COUNTER (Y/N)?` - The receipt counter keeps a running total of all receipts issued to date. It can be used to keep track of the receipt paper and to indicate when the paper is running low.
- `KEYBOARD OPTIONS (Y/N)?` - Default is N. Enter (Y) to display:
- `ENABLE KEYBOARD ACCESS (Y/N)?` - Default is N. With this feature enabled, a customer can enter their card number on the C/OPT keyboard. The card reader is not disabled by enabling keyboard access.
- `SPECIFY PCTs TO SHUT OFF ON E-STOP (Y/N)?` - Default is N (meaning ALL PCTs shut off upon E-STOP). If you enter (Y) to select which PCTs will be turned off, you'll see:
- `ENTER PCTs TO SHUT OFF (#,#.)` - Enter a range and press ENTER.
- If there are card reader errors logged, the next prompt you'll see is: `CLEAR CARD READER ERROR COUNTER (Y/N)?` This prompt is only displayed if the error counter is greater than zero. This counter keeps a running total of bad reads by the card reader.

  A “bad” read is one where the card reader cannot read a card correctly in three sequential attempts. Such a failure could indicate that the card

reader needs cleaning or replacement. Enter (Y) to clear the counter. Enter (N) to keep the counter the same and to display the next prompt.

- The last C/OPT configuration prompt is: `CHANGE FIT ACCESS TO PUMPS (Y/N)?` Default is N. Enter (Y) to change which pumps can be activated by the specified FIT.
- `ENTER VALID PUMPS (p1, p2,..)` If you enter (N), all pumps will be accessible from this C/OPT. You will see ALL PUMPS ACCESSED if you choose (N).

Enter the **DOWNLOAD** command after C/OPT configuration.

Install C/OPT

The **INSTALL FIT#** command activates the specified C/OPT, establishing a communication link between the installed C/OPT and the FSC. C/OPT #1 is auto-installed on power-up.

Remove C/OPT

The **REMOVE FIT#** command stops the FSC from communicating with the specified C/OPT.

PCT Commands

If your system uses Petro Vend Pump Control Terminals these commands set the controllers.

You can **SHOW, PRINT, INSTALL, REMOVE,** or **CONFIGURE** a PCT#.

Each SYSTEM2 C/OPT has a PCT board (PV-268) to control pump operations. This board, in the C/OPT or in a remote cabinet, must be uniquely numbered.

PCT number is set with DIP switch #5 on each PV-268 board. See the *PCT User's Manual* (Petro Vend manual # *M47-00.01)* for details. If the FSC is equipped with UPC (Universal Pump Controller) software, it can authorize fueling transactions via a pump control console (a self service station). Pumps controlled by UPC software do not require a PCT.

Configure PCT

The **CONFIG PCT #** command (a number is required) first asks if a UPC will be substituted for the specified PCT. Press (Y) or (N) as appropriate. If yes, you are asked if the UPC is internal (built into the FSC) or external (in a separate cabinet). Refer to the appropriate System2 UPC manual before proceeding with UPC configuration.

Note

To reconfigure an installed PCT as a UPC, you must first remove the PCT using the command **REMOVE PCT #!**

When SYSTEM2 is "cold started" (with no setup information in the data base), PCT #1 is automatically installed as not a UPC. A cold start is required: (1) when SYSTEM2 is first installed or (2) if both the system power and backup battery fail.

Install PCT

The **INSTALL PCT #** command activates the PCT, creating a link between the installed PCT and FSC. There is a PCT for each C/OPT. This command does not install all positions for a PCT.

Note

Pumps must be installed before the PCT is installed.

After installing pump positions, the PCT(s) themselves must also be installed. A PCT can be configured and kept inoperative by not installing it. At power-up, PCT #1 is automatically installed.

Remove PCT

The **REMOVE PCT #** command ends FSC-to-PCT communication to the specified PCT and deactivates all positions in the specified PCT. All programmed settings remain intact - you can re-install the "removed" PCT without having to reconfigure it.

PCT Position Commands

You can **SHOW, PRINT, INSTALL, REMOVE**, or **CONFIGURE** a *position* within a PCT#. These commands configure or show individual positions within a PCT. PCT positions can be viewed, printed, installed, removed or configured. Each PCT can control up to eight pumps, located at positions #1 - #8.

Required Entries

After issuing **CONFIG PCT # POS #**, a pump number and pulses per unit MUST must be specified for each position:

- **Pump # -** The pump number displayed to the customer for this PCT position (example: `USE PUMP #12'). This number is only a label and does not have to match the PCT position number. A pump number can be assigned to more than one position on the same PCT. When that

pump number is selected by a customer, all the associated positions are activated. For example, say pump number "2" is assigned to positions #1 and #2. A customer with a large saddle-tank could speed his fueling by putting Position 1's pump into one of the tanks and the Position 2 pump into the other tank.

Each PCT position records its own transaction; in this example, two transactions would be recorded (one for each pump). Multiple pump use in this way is not possible when using UPC software.

- **Pulses Per Unit - S**pecifies the number of pulses per "unit" of fuel. A unit is typically gallons, litres or quarts. The prompted unit is the one related to the fuel type just entered. Default value is 100. For more information on fueling units, see *page 88*.

Optional Entries

The following optional PCT items have defaults that should work for most systems. Press ENTER to skip past an optional item and enter the default value. To change a default, enter your new value at the prompt.

- **Max Fuel Per Transaction** - This is maximum quantity of fuel to be dispensed for any transaction using this pump. Default is 10 units. Max Fuel Per Transaction is not the same as Quantity Restriction (described on *page 93*) or the Daily/ Monthly Allocations described in the Cards/ Accounts section of this manual.
- **Enable/Disable Pump Sentry Feature** - This option deactivates the pump if three "zero quantity" transactions appear in a row, a sign of possible pump or pulser trouble. You'll first see PUMP SENTRY OPTIONS (Y/N)?. Enter (Y) to enable the sentry. If you enter (Y), you'll next see ENABLE PUMP SENTRY (Y/N)?; press (Y) or (N) as appropriate. Default is disabled. A PREMATURE BUSY error does NOT increment the Pump Sentry counter.
- **Max Time For Fueling** - The time limit, in minutes, given the user to fuel. Default is five minutes. Time is measured from when the pump is first activated to when power is removed from the pump. To deactivate this feature, enter 0.
- **Max Time For Pump Handle** - Maximum time, in seconds, allowed between pump activation and handle retrieval. Default is 60 seconds. Enter "0" to deactivate.
- **Max Time For First Pulse** - Maximum time, in seconds, allowed to detect the first fueling pulse from handle retrieval. Pump power is removed when the time is reached. Default is 60 seconds. Enter 0 to deactivate.

- **Max Time Between Pulses -** Maximum time, in seconds, allowed between fueling pulses. Pump power is removed when this time is reached. Default is 60 seconds. To deactivate, enter 0.
- **Fuel type Code** # - A number from 1 to 16 that represents the type of fuel this position will dispense (see *page 86* for a list of default fuel types).
- **Tank #** - The tank number from which product will be drawn. A PCT position with the same fuel type as the tank from which product is drawn must be defined. Default tank number is the position number.
- **Clear Pump Totals** - Whether or not to clear running pump totals; default is no.
- **Totalizer Value** - Set a number to match the totalizer counter on the pump face; tracks the amount of fuel actually dispensed by the pump and as seen by SYSTEM2. Default is "0". For UPC-equipped systems, the last four prompts are repeated for up to four hoses.

You must enter the **DOWNLOAD** command after configuring a PCT.

These commands activate or deactivate the specified PCT position.

Set Pump On

This command lets you turn a pump on from the terminal or PC. You are prompted for the following customer information:

```
CARD #1
VEHICLE NAME
CARD #2
ACCOUNT NAME
ACCOUNT #
ODOMETER
DRIVER NAME
MISCELLANEOUS
```

No card validation is done. Customer data is accepted “as-is” and becomes part of the record.

Transaction termination is recorded as `MANAGER ACTIVATED'. If pump is never activated, a `MANAGER ACTIVATED' transaction is generated, but the pump number is recorded as `0'.

Program

The **SHOW, PRINT, INSTALL, REMOVE** and **CONFIGURE PROGRAM** commands are used with UPC-equipped systems only. Refer to your UPC documentation for more information.

Customer Messages Commands

SHOW RECEIPT, PRINT RECEIPT, FORMAT RECEIPT

SHOW RECEIPT HEADER, PRINT RECEIPT HEADER, FORMAT RECEIPT HEADER

SHOW RECEIPT TRAILER, PRINT RECEIPT TRAILER, FORMAT RECEIPT TRAILER

SHOW RECEIPT BONUS POINTS, PRINT RECEIPT BONUS POINTS, SET RECEIPT BONUS POINTS

SHOW DISPLAY #, PRINT DISPLAY #, FORMAT DISPLAY #

SHOW KEYBOARD #, PRINT KEYBOARD #, FORMAT KEYBOARD #

SHOW MESSAGES, PRINT MESSAGES, FORMAT MESSAGES

SHOW DATE, PRINT DATE, FORMAT DATE

This section explains how to format printed receipts (body, header, trailer, and bonus points), how to set up messages and prompts on the various types of C/OPT displays, and how to change the response from a keyboard input (for example, "[Y]" or "N").

Display and Receipt Languages. C/OPT messages and receipt data appear in either French or English. On optical cards, the language selection is coded in the card. Magnetic cards require the customer to choose a language at the start of the transaction. at the beginning of transaction.

Language for receipt is the same as for transaction. It is saved in the transaction record therefore there are two types of receipt - english and french.

Receipts

About Receipts

There are four parts to a receipt:

- •PRE-PRINTED header
- •Header
- •Body
- •Trailer

HEADERS - Take five lines: The two top lines (Lines 1 and 2) are blank, and act as a separator. Lines 3 and 4 are the pre-printed header itself. The 5th header line is the spacer between the pre-printed area and the body of

the receipt. For typeface ONE (the larger style), two of the top four lines are defined. For typeface TWO (smaller style), all four of the top lines are used.

BODY - Uses up to 20 lines.Line 1 is a blank separator. The next 18 lines (2-19) are user-programmable. Line 20 is blank.

TRAILER - Uses up to 4 lines. Otherwise follows the same rules as the header.

The header and trailer/bonus points messages are printed in expanded format unless you specify otherwise.The receipt body fields can be set in any order. Current date & time are automatically printed on each receipt. Receipt size is fixed - make sure the programmed number of receipt body lines will fit onto the receipt.

Programming the Receipt Body

Enter **`FORMAT RECEIPT`**. Fill in the first 10 characters of a line. Next, specify a Receipt Code (in the table below) to print information from the transaction or card file on the indicated Receipt Line.

Table 7: Receipt Structure

Receipt Line #	Receipt Code #	Information Printed
1	--	*Blank*
2	1	Number Of Card 1
3	2	Number Of Card 2
4	3	Transaction Number
5	4	Product Name
6	5	Quantity Dispensed
7	6	Price Per Unit
8	7	Total Price
9	8	Driver Name
10	9	Vehicle Name
11	10	Company Name
12	11	Site I.D.
13	12	Miscellaneous

Table 7: Receipt Structure (Continued)

14	13	Current Odometer Reading
15	14	Miles Per Gallon (MPG)
16	15	Litres Per 100 Kilometers
17	16	Pump Number
18	17	*Not used.*
19	--	*Blank*
20	--	*Blank*

After issuing a command, you'll see:

```
ENTER (Show, Delete, Insert, eXit, Line #):
```

Select a function by entering the capitalized letter; for example, to exit, press the X key and then the ENTER key. Each function is described below:

- **Show -** Displays the current receipt body
- **Delete** - Removes a line from the receipt body
- **Insert** - Inserts another line into the body
- **eXit** - Ends this function
- **Line # -** This is a prompt for a valid line number to edit. The label and code items can be modified.

Programming Receipt Headers and Trailers

The Receipt Header is the message printed at the top of the receipt. You can show, print, or format a header.

To format a header, enter up to 4 lines. Each line can contain up to 11 characters. You can specify red or black print for each line. If you don't need all 4 lines, press ENTER to skip lines.

The receipt trailer programs a message to print at the end of each receipt. The format is the same as for the header.

Sample Receipts

Figure 10 shows a receipt that uses one of the pre-printed header lines (typeface one), and all four footer lines (also typeface one). Note how the

header "gives up" three lines so that the footer can grow. Note also how the body has shifted upwards to accommodate the larger footer.

```
LINE 1    PRE-PRINTED


05/10/96  11:11 AM
CARD #:   1
TRANS #:  12
PRODUCT:  PREMIUM
QUANTITY: 10.7
PR/UNIT:  1.199
TOTAL:    12.83
DRIVER:   T. ROBINSON
ACCT. NAME:K.O. TRUCKING
SITE ID:  XXXXXXXXXXXX
MISC:     123456789012
ODOM:     130445
PUMP #:   6
ACCOUNT#: 123456789

THANK YOU
FOR STOPPING AT
THE WORLD'S LARGEST
FUELING STATION
```

Figure 10: Sample Receipt 1

The receipt in *Figure 11* uses two pre-printeds and two customs in the hearer leaving room for a trailer, of which one line is used here.

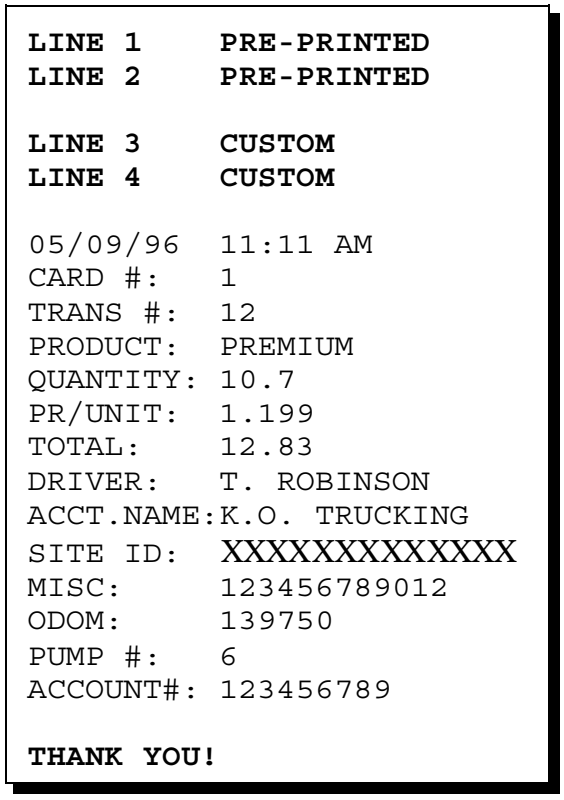


Figure 11: Sample Receipt 3

Display Formatting Commands

The **FORMAT DISPLAY #** command defines prompts that appear on the C/OPT display.

Default prompts are in *Table 8* on *page 68*.

The C/OPT display guides customers through the fueling process with a series of prompts. The system generates default prompts for certain events.

- Standard 2x16 C/OPT display shows two lines of text with up to 16 characters per line.
- Optional graphics display allows a picture to be displayed with a prompt.

The type of display that is installed is in the Status Report, produced with a SHOW SYSTEM command (*page 85*).

Table 8: Default Display Prompts

1	SYSTEM OUT OF SERVICE
2	READING CARD
3	REMOVE CARD
4	INCORRECT READING
5	CHECK CARD ORIENTATION
6	INSERT CARD FOR RECEIPT
7	INSERT CARD FOR RECEIPT
8	PETRO VEND SYSTEM2
9	INSERT CARD
10	SYSTEM CLOSED
11	PLEASE WAIT
12	PRINTING RECEIPT
13	TAKE RECEIPT
14	PRINTER ERROR
15	ISSUE RECEIPT?
16	ENTER PUMP NO:
17	IN USE, RE-ENTER
18	INVALID, RE-ENTER
19	PUMP HANDLE? RE-ENTER
20	FAULTY PUMP, RE-ENTER
21	UNAUTHORIZED, RE-ENTER
22	RESTRICTED, RE-ENTER
23	USE PUMP
24	INSERT 2ND CARD
25	INCORRECT CARD
26	ENTER CARD #

Table 8: Default Display Prompts (Continued)

27	ENTER PIN:
28	ENTER ODOM:
29	ENTER MISC:
30	ENTER 2ND CARD:
31	RE-ENTER PIN
32	RE-ENTER ODOM:
33	*Blank*
34	*Blank*
35	NOT IN CARD FILE
36	CARD EXPIRED
37	CARD RECORD EXPIRED
38	CARD INVALIDATED
39	3 BAD PIN ENTRIES
40	ALLOCATION EXCEEDED
41	*Blank*
42	*Blank*
43	ACCOUNT EXPIRED
44	ACCOUNT INVALIDATED
45	ACCOUNT #s DO NOT MATCH
46	ACCOUNT RECORD NOT FOUND
47	*Blank*
48	JOURNAL ERR - GET MANAGER
49	SYSTEM BUSY - BUFFER FULL
50	*Blank*
51	*Blank*
52	*Blank*

Punctuation: In addition to numbers and letters, you may include most characters such as `!', `?' and `$' in the C/OPT display prompts.

Note

You MUST issue a DOWNLOAD command after altering a prompt, in order for it to be visible.

Beep. Add the `}' (right curly bracket) character to any C/OPT prompt to have an audible tone to sound at the C/OPT when the prompt is displayed. The curly bracket itself does not appear.

Prompts #6 and #7 alternately display when prompting for a receipt. Messages #8 and #9 alternately display while waiting for a customer to activate the system (if #8 and #9 are six characters less then maximum, the current time is also shown.If changing the default message, remember that only the text is changed, not any function. For example, `INSERT CARD' can be changed to `PUT IN CARD' but not to `ENTER CURRENT TIME'.

Enter a **`FORMAT DISPLAY`** command, then enter the number of the C/OPT prompt (*Table 8*) you want to edit. After entering the prompt number, the current prompt and two vertical lines appear. These lines work in the same way as the lines in the 2x16 display.

The lines encase the maximum length of the message; messages must fit between the lines - two rows, each with up to 16 characters. Upper and lower case letters can be used.

Graphic Display Overview

If your system has the optional Graphics Display, pictures and text (in multiple styles) can be placed on one or more lines of the display. The current time can also be displayed with any prompt.

Up to 80 characters can be displayed. To combine pictures with text, you add "control characters" (on a computer, CTRL characters display as ^) to text prompts. In addition to defining pictures, these characters also allow you to:

- Position text on the display
- Select a text style
- Show the current time
- Clear the picture from the display.

Sample graphic pictures begin on *page 74*.

Sample fonts and several examples of prompts with pictures and a list of control characters begin in *Graphics Display Typestyles and Position Codes* on page 78. The graphics codes described in this section can also be added

to the keyboard responses and to the individual messages generated by the messaging feature (*page 85*).

Graphic prompts are limited to 80 text characters, each control character is equal to two text characters. Use the following prompt as an example:

```
`^1^Z  ENTER CARD
```

This prompt consumes 18 characters: two for `^1' (the code that displays picture #1), two for `^Z', (the code that selects the font), and twelve for the text ENTER CARD (including three spaces).

Graphics Display Command Syntax

Editing the text portion of a Graphics Display is like editing a standard one or two line display. After you issue a **FORMAT DISPLAY #** command, enter prompt # to edit. The text prompt for editing the Graphics Display is like a double version of the 1 x 40 display. When specifying the display number, you are shown the current prompt and two vertical lines spaced 40 characters apart.

The first 40 characters of the display prompt are shown on one line, in the space underneath the two vertical lines; the second 40 characters of the prompt (if applicable) are shown on a second line.

Enter the new prompt and press ENTER to complete the entry for the first line. Enter a second line for the prompt if desired. To format another, reenter the command.

Graphics Display Picture Selection

Pictures are defined within the text prompt. To associate a picture with a display prompt, simply add the control character for that picture to the display prompt text.

Place the picture control character before the prompt text. Only one pix ENTER can be connected to a message. You can tie the same picture to as many display prompts as desired.

Numerous picture control codes, and C/OPT prompts typically attached to each picture, begin on *page 74*.

Graphics Display Text Position

To specify where on the display your text will go, insert one or more "position codes" in your prompt. There are 12 "lines" on the display; each of the 12 lines has a position code (*Table 9* on *page 80*).

The position code must be a CAPITAL letter and must be placed before the text. For example:

```
^C THIS IS ON LINE THREE
```

The ^C in the above prompt specifies the text will appear on line three. If no position control character is specified, the text begins on the first (top) line of the display.

Graphics Display Font Selection

Your text messages can be displayed in one of the typesets (shown on *page 79*) listed below. The control character that defines the font is shown below as well:

- Serif, 20 characters per line (^Z)
- Sans-serif, 20 characters per line, Std. set (^Y)
- Sans-serif, 20 characters per line, Intl set (^X)
- Serif, 40 characters per line (^V).

Serifs are the small "tails" on type. The first character below is a serif type-style, while the second is sans-serif:

T T

All typestyles use fixed-width characters (in other words, an "l" takes up as much room as a "W".

Note

Only one typestyle can be used per message.

If you do not specify a style, the last style you specified is used. If you do not specify any styles for any prompts, Style 1 is used.

Time of Day in a Graphics Display

To show current time in a prompt, insert control character `^T' at the end of any display prompt. The time is always displayed in the top right corner of the display. It appears in the current typeface.

Inverting the Graphics Screen

Use ^M to invert the image on the graphics screen (white becomes black, and black becomes white). Use ^N to restore the display to normal. Use ^P to invert the image on the graphics screen (white becomes black, and black becomes white). Use ^Q to restore the display to normal.

Clearing the Graphics Screen

Insert `^0' (control zero) before the prompt text to clear the screen before displaying a prompt. This command is typically used with two-part messages; insert the command after the first part of the message to "erase" the screen for the second part.

A Graphics Display picture remains on the screen until one of the following occurs:

1. Another C/OPT prompt with a picture is displayed OR...
2. A C/OPT prompt with the "clear screen" control code is displayed.

Display Cleaning Products

Cleaning the Screen

The Graphics Display has a thin anti-glare coating. DO NOT use harsh detergents or any petroleum-based solvents to clean the display!

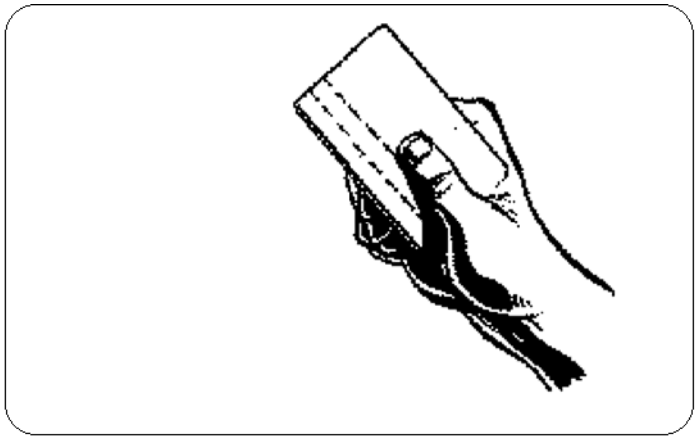
The following products are safe for use on the System2 graphics display panel:

1. AR Kleener - Anti-Reflective. Shield Lens Care Products, Golden Valley, MN. (612) 542-8276. AR Kleener is available nationwide at Sunglass Hut stores.

2. Diamond Glaze Anti-Reflective Cleaner. Diamond Glaze, Inc. St. Paul, MN (800) 322-6644. (612) 227-5560

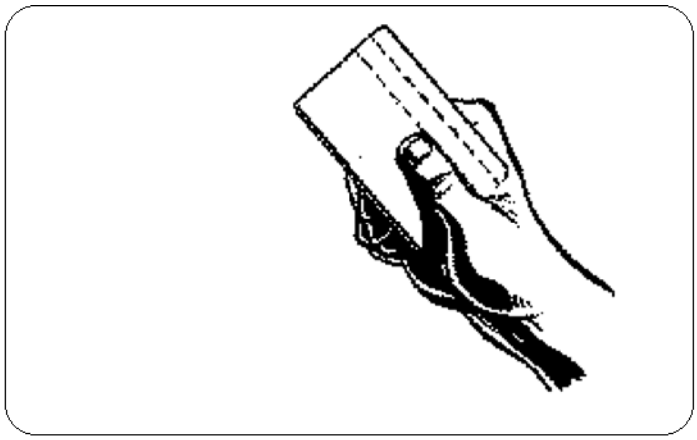
Call the manufacturers above for distributors in your area. Both are widely available in eyeglass stores or optometry clinics.

Sample Graphic Display Prompts



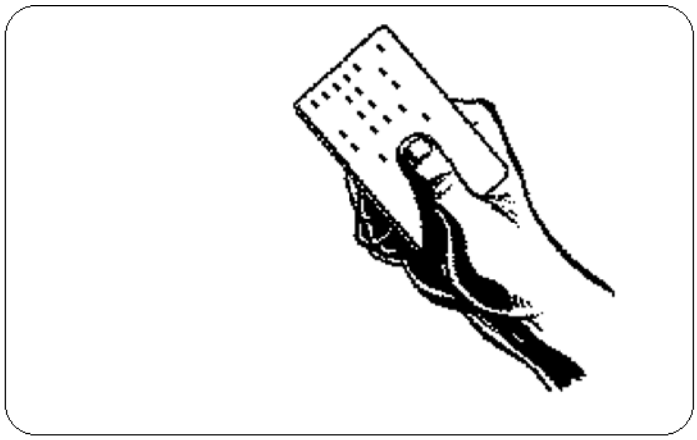
`^1' - Mag Card: Stripe Left (FIT prompts: #6, #7, #9, & #24)

Figure 12: C/OPT *Graphic -- Insert Magcard With Stripe to Left*



`2' - Mag Card: Stripe Right (FIT prompts: #6, #7, #9, & #24)

Figure 13: C/OPT *Graphic -- Insert Magcard with Stripe to Right"*



`^3' - Optical Card (FIT prompts: #6, #7, #9, #24)

Figure 14: C/OPT *Graphic -- "Insert Optical Card"*

`^4' - ChipKey (FIT prompts: #6, #7, #9, #24)

Figure 15: C/OPT *Graphic -- "Insert ChipKey"*

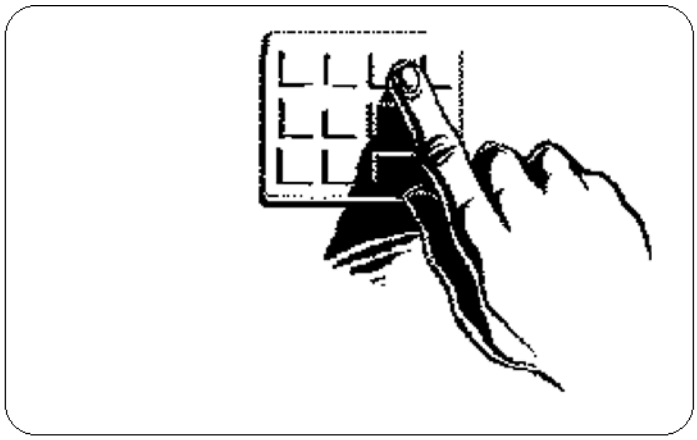


Figure 16: C/OPT *Graphic -- "Enter Card Number on Keypad"*

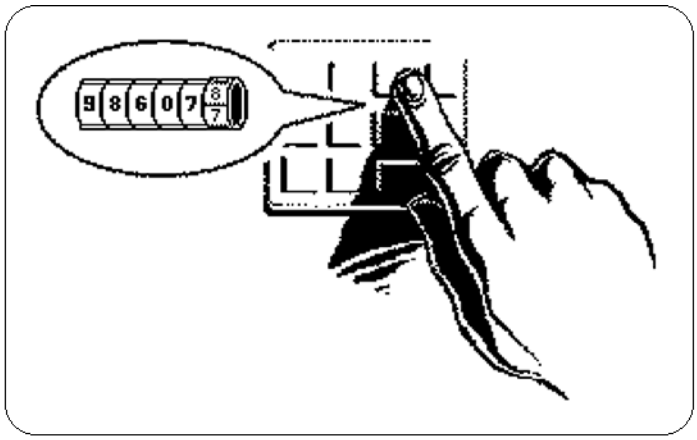


Figure 17: C/OPT *Graphic -- "Enter Odometer Reading"*

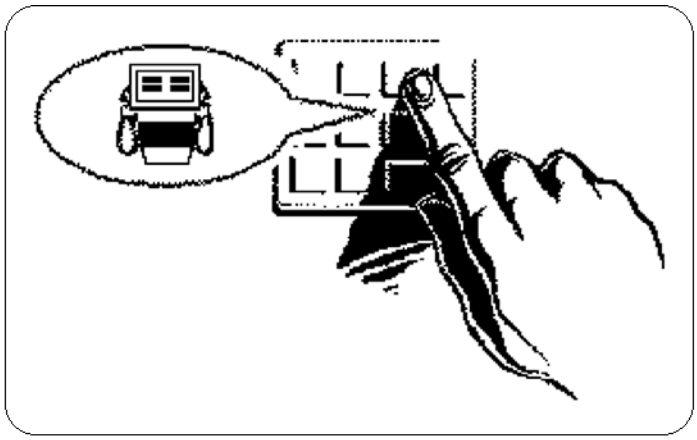


Figure 18: C/OPT *Graphic -- "Select a Pump"*

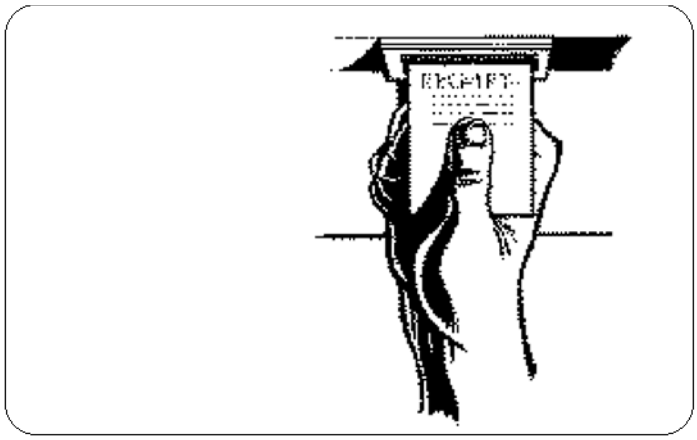


Figure 19: C/OPT *Graphic -- "Take Receipt"*

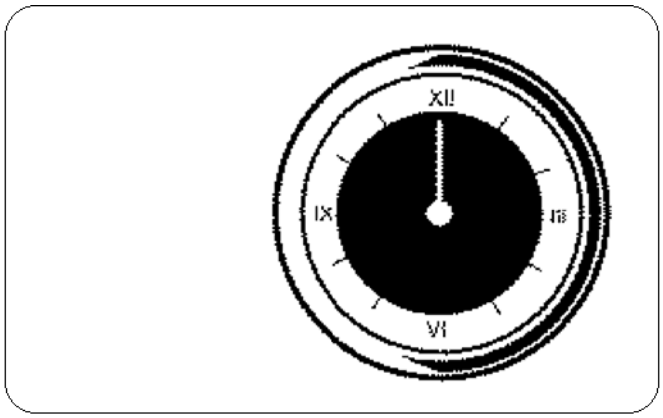


Figure 20: C/OPT *Graphic -- "Please Wait"*

Figure 21: C/OPT *Graphic -- PV Logo*

Graphics Display Typestyles and Position Codes

The following screens show the available typestyles, with their matching control code. Up to 12 lines of text can be displayed for each typestyle. Position control codes specify where on the display the line of text appears; codes apply to all typestyles. For example, to have the prompt INSERT

CARD appear at the bottom of the display (perhaps under a picture), enter: ^LINSERT CARD.

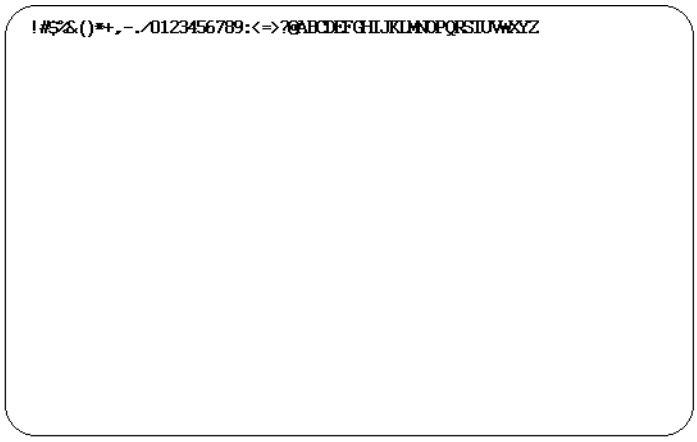


Figure 22: C/OPT *Font Style CTRL V -- Small Sans-Serif*

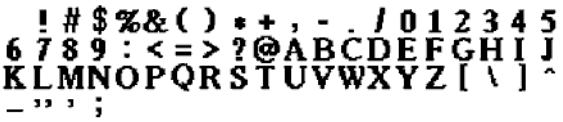


Figure 23: C/OPT *Font Style CTRL Y -- Large Serif*

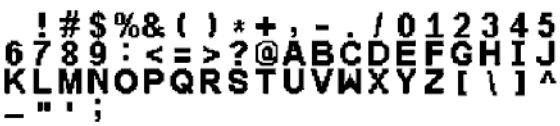


Figure 24: C/OPT *Font CTRL Z -- Large Sans Serif*

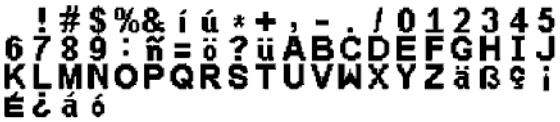


Figure 25: C/OPT *Font CTRL X - Large International*

Graphic Display Control Codes

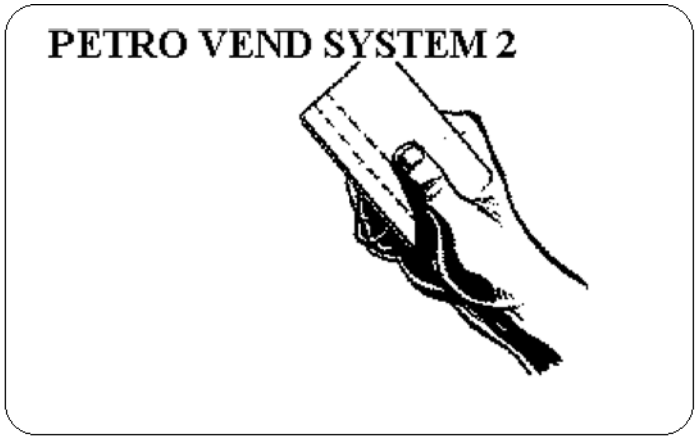
Table 9: C/OPT *Display Screen Control Codes*

CODE	FIT 1.01	FIT 1.02A or over and C/OPT
^A	Position on Line 1	Position on Line 1
^B	Position on Line 2	Position on Line 2
^C	Position on Line 3	Position on Line 3
^D	Position on Line 4	Position on Line 4
^E	Position on Line 5	Position on Line 5
^F	Position on Line 6	Position on Line 6
^G	Position on Line 7	Position on Line 7

Table 9: C/OPT *Display Screen Control Codes (Continued)*

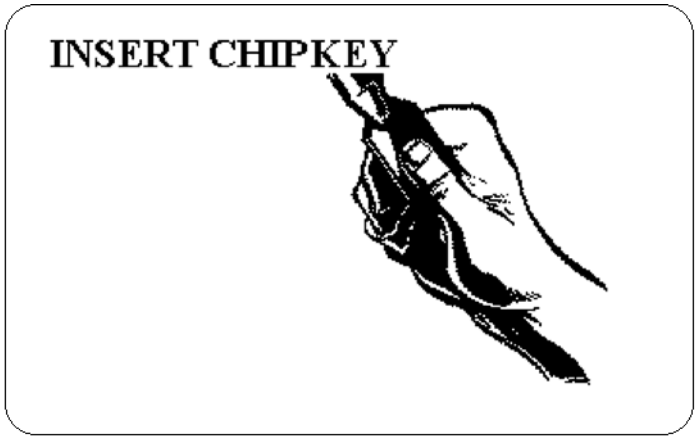
^H	Position on Line 8	Position on Line 8
^I	Position on Line 9	Position on Line 9
^J	Position on Line 10	Position on Line 10
^K	Position on Line 11	Position on Line 11
^L	Position on Line 12	Position on Line 12
^M	Invert graphics display	Position on Line 13
^N	Restore graphics display	Position on Line 14
^O	n/a	Position on Line 15
^P	n/a	Invert graphics display
^Q	n/a	Restore graphics display
^T	Insert Current Time	Insert Current Time
^V	Small Sans-Serif Font	Small Sans-Serif Font
^X	Large Sans-Serif Font, Int'l	Large Sans-Serif Font, Int'l
^Y	Large Serif Font	Large Serif Font
^Z	Large Sans-Serif Font, Std.	Large Sans-Serif Font, Std.
^0 (zero)	Clear Screen	Clear Screen

Graphic Display Examples



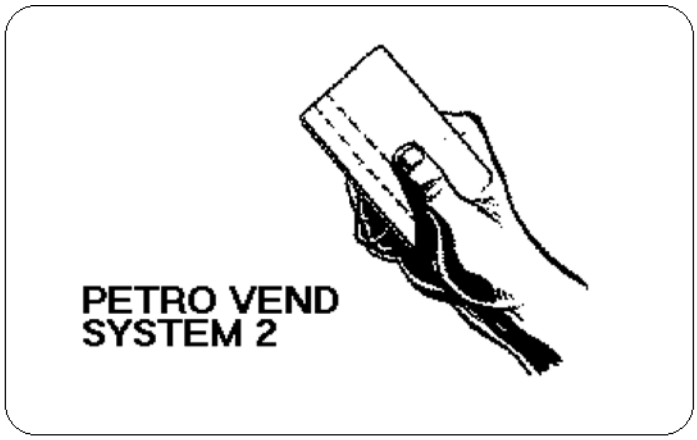

```
^1^Y^A    PETRO VEND SYSTEM 2
```

Figure 26: C/OPT *Graphic Sample -- "Petro Vend System2"*




```
^4^Y^A    INSERT CHIPKEY
```

Figure 27: C/OPT *Graphic Sample -- "Insert ChipKey"*




```
^1^Z^I   PETRO VEND ^J SYSTEM 2
```

Figure 28: C/OPT *Graphic Sample -- "Petro Vend System2" Sans*

```
^0^Y^E   CHECK CARD ^F ORIENTATION
```

Figure 29: C/OPT *Graphic Sample -- "Check Card Orientation"*

System Parameters Commands

SHOW SYSTEM, PRINT SYSTEM

SHOW SITE, PRINT SITE, SET SITE

SHOW FUELTYPE, PRINT FUELTYPE, SET FUELTYPE

SHOW FUELING UNITS, PRINT FUELING UNITS, SET FUELING UNITS

SET PASSWORD

SET LANGUAGE

SHOW BYPASS, PRINT BYPASS, SET BYPASS

SET MENU (always OFF)

SET ECHO

SHOW BONUS POINTS, PRINT BONUS POINTS, SET BONUS POINTS

SET RAM

SHOW VERSION, PRINT VERSION

System

The **SHOW SYSTEM** or **PRINT SYSTEM** commands displays the following current system information (this is a read-only function; SET SYSTEM is not applicable):

- FSC Software Version - for example, **24.63B**.
- Checksums - Results of an FSC program check.
- Display Type (*page 70*):
  - 2 X 16: 2 lines with 16 characters each
  - 1 X 40: 1 line with 40 characters
  - Graphics: 320 x 200 pixels
- Date and Time - As set with System Times (*page 55*).
- System State - ON, OFF or RECEIPTS ONLY (*page 56*).
- Installed C/OPTs - as set with System Devices (*page 57*).
- Status of each C/OPT - RUNNING or DOWN
- Number of receipts issued to date per C/OPT
- Receipt Printer Errors - paper jams, outs, etc.

- Installed PCTs - as set with System Devices (*page 59*).
- Installed Positions - as set with System Devices (*page 60*).
- Pump Sentry Alarm - a position number in parentheses shows a pump automatically put out of service by the system.
- Low Tanks - Tanks that are below their programmed low levels.
- Power Failures - Dates and times of the last four power failures.
- Battery Condition - The condition of the backup battery in the FSC.

Site ID

Use the **SET SITE** command to enter a 12-character code to give a site a unique name. The system defaults a site "name" of "xxxxxxxxxxxx". This code can be printed on receipts, and is used during backup and restore operations with an external computer.

Your site ID must be EXACTLY 12 characters long. It can contain spaces, though the first character cannot be a space.

Fuel Types

Fuel units (gallons, litres, etc.), prices, and names can be set for up to 16 different products. Each product is assigned a code number, which you assign during PCT configuration. Fuel type data can be assigned individually to each pump or hose.

The following are the system default names for the 16 products. Each product has a default "price-per-unit" of $1.00. The "unit" default is gallons; this can be changed using the **SET FUELING UNITS** command (*page 88*).

Table 10: Default Products and Codes

CODE	DEFAULT PRODUCT
1	Unleaded
2	Premium
3	Regular
4	Marked Fuel
5	#1 Diesel
6	#2 Diesel
7	Gasohol
8	Alcohol
9	Propane

Table 10: Default Products and Codes

10	LPG
11	Lubeoil 1
12	Lubeoil 2
13	Trans Oil
14	Coolant
15	Water
16	Air

To change a fuel type:

1. Issue the **SET FUELTYPE #** command, where `#' is the code number (1-16). The first prompt is:

```
ENTER FUELING UNIT CODE (1-3):
```

A fueling unit (gallon, litre, quart) must be specified with the **SET FUELING UNITS** command (next section). Default code is "1". The default for code 1 is GALLON.

2. The next prompt is:

```
CHANGE PRICE (Y/N)?
```

To keep the price the same, press ENTER. If you want to change price per unit, enter (Y) to display the next prompt:

```
ENTER PRICE PER GALLON
```

Default price is $1.00 per unit. Price can be specified to a tenth of a cent; for example, `$1.059'. A price of `$0.000' can be specified for non-retail sites.

Note

The current fuel price is recorded for every transaction. Changing the fuel price does not affect completed transactions.

3. The next prompt is:

```
CHANGE PRODUCT NAME (Y/N)?
```

To keep the name the same. press ENTER. To change it, press (Y) to display the next prompt:

```
ENTER FUELTYPE 1:
```

Names can be up to ten characters long. Type a name, and press ENTER. Change other fuel type codes as desired.

Fueling Units

Three different unit-of-measure labels can be connected to product types (previous section). All are simply labels - no conversion is done.

The default labels, and their "Fueling Unit Codes", are:

(1) gallon (2) liter (3) quart

The numbers 1, 2, or 3 are entered in the FUELING UNIT CODES prompt during a **`SET FUELTYPES`** procedure (*page 86*).

To change the default labels, enter **`SET FUELING UNITS`**. You are prompted for each of the three labels (to keep one the same, just press ENTER. Maximum length of each label is 10 characters.

```
ENTER FUELING UNIT 1:
ENTER FUELING UNIT 2:
ENTER FUELING UNIT 3:
```

Passwords

There are three modes of operation for SYSTEM2: Normal, Privileged and Restricted.

Note

Only normal or restricted mode can be enabled at one time. When you see a `$' prompt, the restricted mode is enabled and the SHOW password (page 88) must be entered to proceed.

- **Normal** - Most SHOW and PRINT commands can be executed in Normal mode. The screen prompt is >. The normal mode is the default mode. This mode does not have to be enabled. No password is required. In this mode, you can print and display all system, card and transaction data.
- **Privileged** - Most SET or FORMAT commands require privileged access. The screen prompt is p>.Enable and disable Privileged mode with SET PASSWORD. To safeguard SYSTEM2 data from unauthorized viewing, you may enable the restricted mode. When this mode is enabled, the "show" password must be entered before any information can be displayed or printed and before the privileged mode can be accessed.

  To configure SYSTEM2, the system must be in the privileged mode. See *System Access Commands* on page 53.
- **Restricted** - This mode, signified by a $screen prompt, requires a password be entered for any screen display to be visible. Enable and disable

Restricted mode with **SET PASSWORD**. When the restricted mode is enabled, no commands will be accepted and no characters will be echoed to the screen until the show password is entered.

Your unit comes from the factory with all passwords set as HELLO, and the Restricted mode OFF.

Note

Passwords do not have to be changed, or the Restricted mode enabled, in order for SYSTEM2 to operate. SET PASSWORD is also used to change the Modem password (page 127)..

To change any or all passwords:

1. Enter **SET PASSWORD.** The system prompts you first for the Privileged-mode password.
2. Enter up to six characters for the main password (or press ENTER-ENTER to retain the old password).Entries are case-INsensitive. The system next prompts you for a Modem password.
3. Enter a new Modem password, or press ENTER to retain the old password and move to the next prompt.
4. Enable or disable the Restricted mode via the following prompt.

   ```
   `SHOW' PASSWORD OPTIONS (Y/N)?
   ```

5. If you don't want to use the Restricted mode (it is disabled by default), press ENTER to skip. If you press (Y):

   ```
   ENABLE SHOW PASSWORD (Y/N)?
   ```

6. Press (Y) or (N) as appropriate. If you enter (Y), you are prompted to enter a new show password.

Language

This feature allows SYSTEM2 to be "bi-lingual" to a certain degree - to display or print in two languages.

Use **SET LANGUAGE** to turn the Dual Language ON or OFF. A Language Type is programmed into each card record. When the card is read, the C/OPT display language changes to the programmed language. Receipts also print out in the specified language.

To program bilingual cards, use **SET CARD** (*page 97*). The display prompts are listed in *Table 8* on *page 68*. Receipts are explained in *Receipts* on page 63.

Certain prompts cannot be defined for a second language - prompts **#2, 3, 4, 5, 6, 7, 8, 9, 24, 25, 26** and **35** (*page 68*) are displayed *before* a card or key

has been read, these prompts should *not* be programmed for a second language.

Bypass

The **BYPASS** command defines which customer entries will be required before the customer can fuel. Choose from the following entries:

- PIN
- Miscellaneous
- Odometer

The selected entry can be prompted as follows:

- Disabled for ALL cards
- Enabled for ALL cards
- Determined by the card information.

Echo

During programming, the FSC sends back (echos) every character it receives from the terminal if echo is enabled. Echo must be ON in order for you to see the characters as you type them into the terminal.

Echo is typically disabled with the **SET ECHO** command only when interfacing to an external computer. Also see *Appendix D - Using System2 With an External PC* on page 129.

Bonus Points

The **SET BONUS POINTS** command allows you to specify a "coupon" value (based on the amount of fuel dispensed) to be printed on each receipt. A Bonus Points message can also be specified.

For example, bonus points can be awarded to customers as credit toward using a local car wash facility.

To print bonus points on a receipt, see *Customer Messages Commands* on page 63.

RAM

Initially configuring your SYSTEM2 requires you define the size of the system memory with the **SET RAM** command. The card file and transaction records are stored in RAM chips on the FSC board. The number of RAM chips on your FSC board depends on the amount of RAM you ordered.

Enter **SET RAM**. You are prompted to enter the code appropriate for your system:

Table 11: RAM Levels

CODE TO ENTER	MEMORY LEVEL	RAM SIZE
0	1 (Standard)	256 Kb
1	2 (Optional)	512 Kb
2	3 (Optional)	1 Mb
3	4 (Optional)	2 Mb

Press ENTER to keep the current code. You cannot enter a memory code if there isn't sufficient RAM in the system (for example, you can't enter "2" if you only have 512 K of memory). Privileged mode is lost if the system rejects a RAM entry. Then, the password must be reentered.

If you don't know the RAM size, you can determine it by trial and error. Start by entering 3 and continue until SYSTEM2 accepts the entry.

Version

The **SHOW VERSION** or **PRINT VERSION** command displays the current software version (for example, 22.01B). This information is also included in the Show System display (Option A in System Parameters).

This is a read-only function: there is no SET VERSION command.

Restrictions Commands

SHOW PUMP, PRINT PUMP, SET PUMP

SHOW QUANTITY, PRINT QUANTITY, SET QUANTITYS

SHOW SEC, PRINT SEC, SET SEC

Pump Restrictions

The **SET PUMP** command defines codes for up to 15 sets of pump restrictions.

Use the following pump configuration as an example:

- Leaded fuel is dispensed from pump 1, and cannot be used in newer trucks
- Unleaded fuel from pump 2, and can be used in either new or old trucks
- Premium fuel from pumps 3 and 4, and should not be available to any trucks.

Enter pump #1 as valid for CODE 1, and pumps #1 and #2 as valid for CODE 2. Do not assign pumps 3 or 4 - pumps not entered as valid are automatically assumed invalid.

Now use Codes 1 and 2 to configure the vehicle card files for the trucks; other codes could be created to include the premium fuel pumps as required. The default for all codes is ALL VALID.

Code 0 is no restrictions. In the example above, code 0 could be specified for vehicles that would have access to all four pumps.

Pumps must be installed to be valid (*page 60*).

Quantity Restrictions

Fifteen Quantity Restriction codes can be defined with the **SET QUANTITY** command. Restrictions can be by sale amount or by volume (gallons, litres or quarts).

The Quantity Restriction codes specify how much product a customer can dispense. Quantity Restriction is often set to match a vehicle's tank size. Sale defaults are as follows (Code 0 turns OFF the function):

Table 12: Default Quantity Restriction Codes

CODE	PRICE RESTRICTION
0	No restriction

Table 12: Default Quantity Restriction Codes

1	$20
2	$40
3	$60
4	$80
5	$100
6	$120
7	$140
8	$160
9	$180
10	$200
11	$220
12	$240
13	$260
14	$280
15	$300

After entering **SET QUANTITY**, you'll see:

```
QUANTITY RESTRICTION CODES:
CODE 0: NO RESTRICTIONS
CODE 1: $
```

7. Press ENTER (without an entry) to select the default value, or enter a different value.

8. After the last entry, you are prompted with:

   ```
   QTY RESTRICTION VALUE OPTIONS (Y/N)
   ```

   If you press (Y), you are prompted:

   ```
   USE VALUES AS $(Y/N)?
   ```

   Press (Y) to use the values as dollars or (N) to use the values as quantities.

Enteredquantity values represent gallons, litres or quarts, depending on the quantity units. See *page 88* for Fueling Units information.

Security

Each system has a "security table" built into the software. The security table is made up of ten 2-digit hexadecimal numbers (in two rows of five) used by the INSERT CARD and COPY CARD # commands for automatic PIN number generation. The default values are the same for every SYSTEM2 - you MUST set new values with this command in order to generate unique PIN numbers for your system.

After entering the **`SET SEC`** command, you are prompted with the current value of ROW 1 (the system defaults are shown):

```
ROW 1: 01 23 45 67 89
```

1. Enter five 2-digit hex numbers, pressing the ENTER key after each. Hex numbers include the decimal numbers 0 to 9 and the letters A to F. The entries should be as random as possible.
2. After the fifth entry, you are prompted for the second row (ROW 2) in the same way as the first. Again, enter five different 2-digit hex numbers.
3. After entering the last digit in row 2, you are prompted with:

   ```
   SECURITY CODE: 00
   ```

The Security Code (default is 00) gives an additional degree of randomness. Changing this code generates different PINs from the same security table. Enter any two-digit hex number (except `00') for this code.

Note

Record your Security Table numbers on the worksheet (Appendix A)! If you are reconfiguring your system, or wish to generate PIN numbers to match another SYSTEM2, the row and security code numbers must match your original entries!

Card Commands

SHOW CARD, PRINT CARD, SET CARD, VAL CARD, INVAL CARD

Set Card

Enter the **SET CARD** command to display the following:

```
[1] Set card/transaction buffer size.
[2] Set keyboard entry options.
[3] Set keyboard access type.
[4] Set keyboard card control data.
[RETURN] Return to main command line

Enter choice:
```

Set Card/Transaction Buffer Size

This option splits the transaction buffer into two or three sections.

1. Press (1).

```
TRANSACTION BUFFER WILL BE CLEARED (Y/N)?
```

Warning

This command erases ALL transaction data. There is NO "undo".

2. Enter `Y' to delete the buffer and continue.
3. The next prompt is:

```
ENTER TRANSACTION SIZE CODE
```

The transaction size code is determined by the formula:

```
size code = Number of transactions / 25
```

For example, to store 100 transactions, enter a size code of four (100/25 = 4). The transaction capacity of the SYSTEM2 depends on the amount of RAM in the system (which you can see with the SHOW RAM command).

4. Enter a size code. You will now see system configuration data:

```
# OF CARDS: ######
# OF TRANSACTIONS:
-- SAVE THIS CONFIGURATION (Y/N)?
```

To change the configuration, enter `N' at the prompt to select a different size code. To save the current configuration, enter `Y' at the prompt.

`PLEASE WAIT!` Appears while cards are validated. This process takes anywhere from a few seconds to several minutes, depending on the amount of RAM.

Note

DO NOT use the same card number for more than one card; in particular, do not give a Driver and a Vehicle card (used in pairs) the same card number.

You see DONE! when validation is completed. SYSTEM2 can request the following three types of customer information:

•Current odometer reading

•Miscellaneous data (for department section, job number, etc.)

•PIN number.

These prompts can be set for all cards, for no cards, or only for cards that are coded for a keyboard entry. Select [2] to display the following screen:

```
Keyboard entry options:
[1] Disable for all cards
[2] Enable for all cards
[3] Determined by card
[RETURN] No change

Odometer entry:
```

Enter a value and press [RETURN]. Default is [3] Determined by card. Next is the Miscellaneous entry and then for the PIN entry. Enter a code number for each.

The PIN entry cannot be disabled.

Set Keyboard Access Type

In lieu of a card or key, the SYSTEM2 can be accessed via entries on the keypad. Keyboard Access Type defines the card type that a keyboard access duplicates.

After selecting this option, you will see:

```
Set keyboard access type (Single, Driver, Vehi-
cle):
```

Enter `S', `D', or `V' to select a card type, or press [RETURN] to enter the current value. Default is Single.

When a card number is entered via the keyboard, SYSTEM2 uses code 15 for quantity and pump restriction.Odometer, miscellaneous and PIN entries are always prompted if keyboard entries are determined by card (see Section 12.2.2).

Note

Keyboard Access numbers should not be the same as Card Numbers! For example, if you assigned Driver Card number 1000 and Vehicle Keyboard Access number 1000, both numbers will always be either valid or invalid - you cannot lock out only the card or only the keyboard access.

After three bad card reads, the system can optionally allow the customer to enter his own card number. This option is set with a switch in the C/OPT.

When you select this choice, you are prompted:

```
ENTER THE CARD CONTROL DATA STRING
```

You are prompted for the card control data which will be appended to the end of the customer's entry. The system will use this as the customer card data when customers key in their card number.

This data string will be used for all cases where customers key in data.

When the **SHOW CARD** command is entered, the following is displayed:

```
[1] Display card (in)validation status.
[2] Display keyboard entry settings.
[3] Display keyboard access type.
[4] Display expiration date code table.
[RETURN] Return to main command line.

                  Enter choice:
```

Option [1] displays the validation status of a card or range of cards. You are prompted for the card number or range. Data are displayed in the following manner.

```
1-> VVVVVVVVVV VVVVVVVVVV VVVVVVVVVV VVVVVVVVVV
VVVVVVVVVV
51-> IIIIIIIIIV VVVVVVVVVV VVVVVVVVVV VVVVVVVVVV
VVVVVVVVVV
```

In the above display, `V' indicates a card is valid; `I' indicates a card is invalid. In the example above, cards 1 - 50 and 60 - 100 are valid; cards 51 - 59 are invalid.

Options [2], [3], and [4] display the keyboard entry settings, access type, and expiration date code table.

Validating or Invalidating Cards

When either the **VAL CARD** or **INVAL CARD** command is entered, the maximum card range which can be validated or invalidated is displayed. Proceed:

Enter a range and press ENTER. If you select a range of more than 100 cards, you are prompted a second time. If numerous cards are being processed, you will see PLEASE WAIT during execution.

You will see DONE when the process is finished. A sample sequence appears below:

```
p> VALIDATE CARD
p> VALIDATE CARD
Maximum card range: 1-208112

Enter card # or card range to be validated,
Press [RETURN] to exit.
Card (range):
33333
Card (range): 33333 DONE!
Validated card(s): 33333
Card (range):
1-10000
Validated card(s): 1-10000 (Y/N)?
Y
Validated card(s): 1-10000 (Y/N)? PLEASE WAIT!
Validated card(s): 1-10000 (Y/N)? DONE!
Validated card(s): 1-10000
Card (range):
[ENTER]
p>
p> VALIDATE CARD
Maximum card range: 1-208112

Enter card # or card range to be validated,
Press [RETURN] to exit.
Card (range):
33333
Card (range): 33333 DONE!
Validated card(s): 33333
Card (range):
1-10000
Validated card(s): 1-10000 (Y/N)?
Y
Validated card(s): 1-10000 (Y/N)? PLEASE WAIT!
Validated card(s): 1-10000 (Y/N)? DONE!
Validated card(s): 1-10000
Card (range):
[ENTER]
p>
```

Notes:

Transaction Data Commands

SHOW TRANS, PRINT TRANS, SET TRANS

SHOW TRANS #, PRINT TRANS #

SHOW TRANS SUMMARY, PRINT TRANS SUMMARY

SHOW TRANS CF, SHOW TRANS CARD=LOCAL,
SHOW TRANS CARD=LOCAL CF, SHOW TRANS CARD=HOST,
SHOW TRANS CARD=HOST CF, SHOW TRANS CARD=ALL,
SHOW TRANS CARD=ALL CF, SHOW TRANS BATCH=XX,
SHOW TRANS TRACE=XXXXX, SHOW TRANS RETRIEVAL=XXXXXXXXXXXX

Show or Print by Date, Time, Card, or Vehicle

The **SHOW/PRINT [date time card account vehicle]** command displays or prints completed transactions stored in the SYSTEM2 data base by one data field.

Though all transactions are recorded, what you actually see is determined by the **SET TRANS** command.

When you issue a **SHOW TRANS** or **PRINT TRANS**, you are prompted as follows:

```
ENTER DATE:
ENTER TIME:
ENTER CARD:
ENTER ACCOUNT:
ENTER VEHICLE:
```

There are four types of responses to these prompts. Pressing ENTER at each prompt tells the system to ignore that parameter.

To define a range, enter a time, date, or number at a prompt.

For example, to display only the transactions from January 22, 2000, enter JAN 22 2000 at the date prompt, and then press ENTER at the other four prompts.

When specifying the time or date, you can also include one of two following prefixes:

- **<** ("less than" sign). Will include all transactions up to and including the current time or date. For example, to include all transactions up to and including Jan. 22, 2000, enter <JAN 22 2000 at the date prompt.
- **>** ("greater than" sign). Will include all transactions starting with and including the specified time or date. For example, to include all that

occurred after 5:00 PM (and before midnight), you would enter >5:00 PM at the time prompt.

```
>PRINT TRANSACTION 161
    -ALLOW WRAP AROUND
    -SAVE UNAUTHZ'D USERS ALSO
    -TRANSACTION BUFFER SIZE: 25
  SEQUENCE #: 123
  REASON FOR TERMINATION: NORMAL
  FEB 22, 2000   07:11 PM
  TRANSACTION #: 123
  CARD #: 20001
  FUELTYPE: UNLEADED
  PUMP #: 3
  QUANTITY: 25.000 GALLON
  PRICE: $1.000
  TOTAL: $25.00
  ODOMETER: 66555
  MISCELLANEOUS: 1234567890
  --RECEIPT ISSUED
```

Show or Print Summary by Transaction, Date, Time, Card, or Vehicle

The **SHOW/PRINT TRANS [date time card account vehicle] SUMMARY** command displays only the product totals.

```
-ALLOW WRAP AROUND
-SAVE AUTHZ'D USERS
-TRANSACTION BUFFER SIZE: 25

      *** PRODUCT TOTALS ***

UNLEADED    : 46.080 GALLON  TOT: $46.08
PREMIUM     : 35.840 GALLON  TOT: $35.84
REGULAR     : 34.900 GALLON  TOT: $34.90
TRANSACTIONS: 9     GRAND TOTAL: $116.82
           AVERAGE: $12.98
Show or Print by Transaction #
```

The **SHOW/PRINT TRANS#** command is quick method of displaying transaction data. You are prompted only for the transaction number.

Set Transaction

The size of the transaction buffer is set when you define card buffer size (*page 97*). The **SET TRANS** command specifies how the transaction buffer is to be configured. The first prompt is:

```
SET WRAP AROUND OPTIONS?
```

Press (N) to disable wraparound.

The next prompt is:

```
RE-DEFINE TRANSACTION?
```

Enter (Y) to redefine transactions and display:

```
TRANS=UNAUTHZ'D USERS ALSO?
```

If you enter (Y), the system processes an unauthorized attempt to use the system as a transaction and logs the event in the transaction buffer.

Entering (N) causes the system to ignore any unauthorized users and events; only cases where a pump was activated by the SYSTEM2 are recorded.

The next SET TRANS prompt is:

```
SPECIFY DISPLAY FIELDS?
```

Enter (Y)

This lets you tell the system which fields to display when a SHOW TRANSACTION or PRINT TRANSACTION command is issued. Choose from the following fields:

- DRIVER, VEHICLE
- DATE & TIME
- TRANS #
- CARD #1
- CARD #2
- FUELTYPE
- PUMP #
- QUANTITY
- PRICE
- TOTAL
- ODOMETER
- DISTANCE PER UNIT

- MISCELLANEOUS
- RECEIPT STATUS
- HOST AUTHORIZATION

There must be at least one transaction recorded in your system in order to show all the selected data fields. The last SET TRANS option (displayed after the account number prompt) is:

```
COMPUTER FORMAT CHECK DATA IN HEADER?
```

When transferring data to an external system in the computer format (*Appendix D - Using System2 With an External PC* on page 129), an optional data check can be prefixed to the transaction header to provide greater data integrity. The data check includes: (1) the number of records and (2) the sum of the quantities for records.

Press (Y) to enable or (N) to disable the data check.

Visanet Transaction Commands

SHOW TRANS *(shows only local Hollerith card transactions)*
SHOW TRANS CF
SHOW TRANS CARD=LOCAL
SHOW TRANS CARD=LOCAL CF
SHOW TRANS CARD=HOST *(Shows only Visanet- and Comdata-processed card transactions)*
SHOW TRANS CARD=HOST CF
SHOW TRANS CARD=ALL *(Shows both local and host card transactions)*
SHOW TRANS CARD=ALL CF
SHOW TRANS BATCH=XX *(Where "XX" is batch number, shows host cards by batch number)*
SHOW TRANS TRACE=XXXXX *(Where "XXXXX" is trace number, shows host cards by trace number)*
SHOW TRANS RETREIVAL= XXXXXXXXXXXX *(Where "XXXXXXXXXXXX" is the retrieval number, shows cards by retrieval number)*

System Totals Commands

SHOW TRANS TOTAL, PRINT TRANS TOTAL

SHOW MIDNIGHT, PRINT MIDNIGHT

SHOW DAY, PRINT DAY

Note

Although "Account" may appear in some screens, this software does not support accounts.

Showing or Printing Total Transactions by Date, Time, Card, or Vehicle

The **SHOW TRANS TOTALS** or **PRINT TRANS TOTALS** commands let you print and show the completed transactions that stored in the SYSTEM2 data base. This function is similar to the SHOW/PRINT TRANS command explained in the Transaction Data section (*page 103*).

Showing or Printing Summary of Total Transactions by Date, Time, Card, or Vehicle

This command displays only product totals, without listing all the transactions. This function is very similar to the SHOW/PRINT TRANS SUMMARY command in the Transaction Data section (*page 103*).

Midnight Totals

The **MIDNIGHT** commands summarize totals for a day. The following data is logged in the SYSTEM2 journal at 12:00 AM - midnight:

- Daily transaction totals for each POS position of each PCT
- Daily product totals
- Daily transaction records

On the Midnight screen, when a POS position is installed, the pump number is indicated next to the POS number. If one or more of the eight POS positions is not installed, the position is indicated with an `X'.

Use **SHOW MIDNIGHT** to display the data for any of the preceding eight days. When you enter the command, you are prompted to specify which day. For example,

```
1: JAN 27, 2000
2: JAN 28, 2000
```

```
3: JAN 29, 2000
4: JAN 30, 2000
5: JAN 31, 2000
6: FEB 1, 2000
7: FEB 2, 2000
8: FEB 3, 2000 -- ACTIVE
    ENTER CHOICE:
Enter [1] -[8] to select the day, or ENTER to
exit.
```

The current date is the `ACTIVE' date. Note that the data are stored in a "wrap-around" buffer. This means that as new data are recorded, old data are erased. In the above list, when data for February 4 is recorded, data for January 27 will no longer be available for display.

Day Totals

The **SHOW DAY** or **PRINT DAY** commands display or print the following information for the specified day:

- Amount of each product dispensed
- Number of transactions
- Grand total of product dispensed
- Total dollar amount

Dollar value of average transaction for the specified day.

Journal Printer Commands

SHOW JOURNAL, PRINT JOURNAL, SET JOURNAL

LOCK PRINTER, UNLOCK PRINTER

Set, Show or Print Journal Printer Configuration

Connect your journal printer to the PRINTER port on the back of the FSC to make a hard copy of all transaction data, providing added protection against data loss.

The printer records the transaction, pump and product numbers, the date and time, the first card number, the product quantity and dollar total.

The **SHOW JOURNAL** and **PRINT JOURNAL** commands display current printer configuration.

Use the privileged **SET JOURNAL** command to specify the system will operate with an external printer. If so, you can also specify which of the following items will be printed:

- Driver or Vehicle names. Odometer entry. Miscellaneous entry.
- Second card if used.

What you see after typing a **SET JOURNAL** command, and answer Y to all prompts:

```
OFFICE JOURNAL (Y/N) Y
SET JOURNAL PRINTER OPTIONS (Y/N) Y
 PRINT:
ACCOUNT (not used), DRIVER, VEHICLE, ODOM, and
MISC (Y/N)
ACCOUNT #, CARD 2 (Y/N)
JOURNAL ERROR OPTION (Y/N)
 -- ENABLE AUTH ON JOURNAL ERROR (Y/N)
```

The JOURNAL ERROR OPTION specifies if the system should authorize fueling when the printer is not operating. The printer may "block" if an error, such as a paper outage, occurs. After fixing the error, unblock the communication with the SET PRINTER command.

Lock Printer

The **LOCK PRINTER** command lets you turn OFF the logging function for the printer, useful for when multiple PRINT commands are executed.

If you want to print several items (for example, several types of transaction data) you can keep the printouts together by issuing the LOCK PRINTER command. No "incoming" items will be printed until you turn OFF the LOCK.

Unlock Printer

The **UNLOCK PRINTER** command returns the printer to its normal logging function. Any transactions that were locked out are printed when the printer is unlocked. If no command is generated for 10 minutes while the printer is locked, the system exits the privileged mode and unlocks the printer.

Appendices

Appendix A - Setup Worksheet

System Times (*page 55*)

Forward: _____

Backward: _____

System On: _____

System Off: _____

Time Shifting: _____

Receipts Only: _____

Time Adjust: _____

Light On: _____

Light Off: _____

System Devices (*page 57*)

C/OPT Setup

C/OPT #1

Issue receipts? yes no

Limit for receiving a receipt (0..99) _____

Enable keyboard access? yes no

PCTs to shut off on E-stop 1, 2, 3, 4

Valid pump numbers _____

C/OPT #2

Issue receipts? yes no

Limit for receiving a receipt (0..99) _____

Enable keyboard access? yes no

PCTs to shut off on E-stop 1, 2, 3, 4

```
Valid pump numbers                    _________
```

C/OPT #3

```
Issue receipts?                       yes  no

Limit for
  receiving a receipt (0..99)         _________

Enable keyboard access?               yes  no

PCTs to shut off on E-stop            1, 2, 3, 4

Valid pump numbers                    _________
```

C/OPT #4

```
Issue receipts?                       yes  no

Limit for
  receiving a receipt (0..99)         _________

Enable keyboard access?               yes  no

PCTs to shut off on E-stop            1, 2, 3, 4

Valid pump numbers                    _________
```

Installed C/OPTs

```
FIT #1    FIT #2    FIT #3    FIT #4
```

PCT Setup (*page 59*)

There are up to four PCTs in a SYSTEM2, each PCT controlling 8 positions. Copy this page and the next as needed. Circle the appropriate PCT and position numbers. Note that most PCT configurations do *not* require *all* of this information.

Table 13: Setup Worksheet - PCT Position Details

PCT Number	**1**	**2**	**3**	**4**
POSITION NUMBER	**1**	**2**	**3**	**4**
Pump Number				
Pulses / Unit				
Max Fuel/Transaction				
Sentry Feature				

Table 13: Setup Worksheet - PCT Position Details

Max Time Fuel				
Max Time Handle				
Max Time 1st Pulse				
Max Time Between Pulses				
POSITION NUMBER	**5**	**6**	**7**	**8**
Pump Number				
Pulse / Unit				
Max Fuel/Transaction				
Sentry Feature				
Max Time Fuel				
Max Time Handle				
Max Time 1st Pulse				
Max Time between Pulses				

Table 14: Setup Worksheet -- PCT/Position Numbering

PCT Number	**1**	**2**	**3**	**4**
POSITION NUMBER	**1 / 5**	**2 / 6**	**3 / 7**	**4 / 8**
Fuel type Code #				
Fueling Tank				
Clear Pump Totals				
Totalizer Value				

Installed PCT Positions (*page 60*)

PCT #1 POS # 1 2 3 4 5 6 7 8

PCT #2 POS # 1 2 3 4 5 6 7 8

PCT #3 POS # 1 2 3 4 5 6 7 8

PCT #4 POS # 1 2 3 4 5 6 7 8

Installed PCTs (*page 59*)

PCT #1 PCT #2 PCT #3 PCT #4

Customer Messages (*page 63*)

Message # **Prompt**

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

11 _____

12 _____

13 _____

14 _____

15 _____

16 _____

17 _____

18 _____

19 _____

20 _____

21 _____

22 _____

23 _____

24 _____

25 _____

26 _____

27 _____

28 _____

29 _____

30 _____

31 _____

32 _____

33 _____

34 _____

35 _____

36 _____

37 _____

38 _____

39 _____

40 _____

41 _____

42 _____

43 _____

44 _____

45 _____

46 _____

47 _____

48 _____

49 _____

50 _____

51 _____

52 _____

Keyboard Messages (*page 85*)

Table 15: Setup Worksheet -- Keyboard Messages

Key	Message	Default Function

Table 15: Setup Worksheet -- Keyboard Messages

1		*YES*
2		*NO*

Receipt Header (*page 63*)

Table 16: Setup Worksheet -- Receipt Headers

	Entry	**Color**
Line 1:		RED BLACK
Line 2:		RED BLACK
Line 3:		RED BLACK
Line 4:		RED BLACK

Receipt Trailer (*page 63*)

Table 17: Setup Worksheet -- Receipt Trailers

	Entry	**Color**
Line 1:		RED BLACK
Line 2:		RED BLACK
Line 3:		RED BLACK
Line 4:		RED BLACK

Receipt Body (*page 63*)

	Entry	**Receipt Code**
Line 1:		
Line 2:		
Line 3:		
Line 4:		
Line 5:		
Line 6:		
Line 7:		

Line 8:		
Line 9:		
Line 10:		
Line 11:		
Line 12:		
Line 13:		
Line 14:		
Line 15:		

Bonus Points (*page 90*)

ONE POINT PER _____ CENTS

	Entry	Color
Line 1:		RED BLACK
Line 2:		RED BLACK
Line 3:		RED BLACK
Line 4:		RED BLACK

System Parameters (*page 85*)

Site ID _____

Fuel Types (*page 86*)

Type #	Fueling Unit	Price Per Unit	Product Name
1			
2			
3			

4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Fueling Units (*page 88*)

Code #	Label
1	
2	
3	

Passwords (*page 88*)

Main: _____

Modem: _____

Show: _____

Restrictions (*page 93*)

Pump Restrictions (*page 93*)

Restriction No.	Pumps Restricted:
1	

2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Quantity Restrictions (*page 93*)

Code No.	Max. Qty.	Code No.	Max. Qty
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
8			

Cards (*page 97*)

Choice #1

Size Code: _____ Number of Transactions: _____

Size Code: _____ Number of Messages: _____

Choice #2

Odometer Entry: [1] [2] [3]*

Miscellaneous Entry: [1] [2] [3]

PIN Entry: [1] [2] [3]

** 1 = DISABLE all 2 = ENABLE all 3 = Determine by Card*

Choice #3

Keyboard Access Type: SINGLE DRIVER VEHICLE

Choice #4

Code Number Dates:

1:	6:	11:
2:	7:	12:
3:	8:	13:
4:	9:	14:
5:	10:	15:

Transaction Data (*page 103*)

Enable Wraparound yes no

Log Unauthorized Transactions yes no

Display fields

Account, Driver, Vehicle yes no

Date & Time yes no

Transaction # _____

Card #1 yes no

Card #2 yes no

Fueltype yes no

Quantity yes no

Price yes no

Total yes no

Odometer yes no

Miles per unit yes no

Miscellaneous yes no

Receipt Status yes no

System Totals (*page 107*)

Tank Number	Fuel type	Current Quantity	Low Level Alert at
1			
2			
3			
4			
5			
6			
7			
8			

Journal Printer (*page 109*)

Print card 2 number yes no

Print card name (acct, driver, vehicle) yes no

Print odometer, miscellaneous yes no

Allow fueling on journal error yes no

Appendix B - RAM Level vs. Transaction Capacity

Table 18 shows the maximum number of transactions and cards or keys available with the standard and optional levels of RAM in your System 2. The memory level is displayed or set with the **SHOW RAM** or **SET RAM** commands (*page 90*) in System Parameters.

Table 18: RAM Quantity vs. Transaction/Card-Key Capacity

MEMORY SIZE	NUMBER OF TRANSACTIONS	APPROX. # OF CARDS/ KEYS
Level 1 (256 Kb)	100	1,500,000
	1000	130,000
Level 2 (512 Kb)	1000	2,300,000
	1500	1,600,000
	2000	860,000
Level 3 (1 Mb)	1000	6,400,000
	2500	4,100,000
	5000	340,000
Level 4 (2 Mb)	1000	14,800,000
	5000	8,700,000
	10,000	1,100,000

Notes:

Appendix C - Using System2 With a Modem

Introduction

SYSTEM2 can be interrogated and programmed remotely over conventional telephone lines using modems. The "local" modem is at the SYSTEM2 site; the "remote" modem is a remote terminal or computer.

The Data Carrier Detect ("DCD") is an output from the modem which SYSTEM2 uses to know when a call has been received.

The Data Terminal Ready ("DTR") is an output from SYSTEM2 which allows the modem to answer.

The PC Logic modem (available from Petro Vend) requires a PC in order to be configured.

Configuring the Modem

The modem connected to the SYSTEM2 must have an "answer only" configuration. The "parameters" in *Table 19* are required for ANY local modem. If you are using the PC Logic modem, enter the commands shown in the table.

Table 19: Modem Commands

Parameter	PC Logic Command
Answers on 1st Ring	**ATS0=1**
Monitors Data Carrier Detect	**AT&C1**
Result codes NOT returned	**ATQ1**
Resets when Data Terminal Ready is turned OFF	**AT&D2**

If you entered the PC Logic commands in *Table 19*, enter `AT&W' to store the configuration permanently. The default baud rate for the PC Logic modem is 2400.

Factory Modem Settings

Use the command `AT&F' to load the factory configuration for the remote PC Logic modem. The default baud rate is 2400. The initial modem password is `HELLO'. To change the modem password, see *page 88*.

Appendix D - Using System2 With an External PC

This appendix tells you:

- How to connect a computer to the System2
- How to retrieve transaction data from the SYSTEM2 in computer format
- How to send configuration data to the SYSTEM2 in computer format
- How to backup and restore card and configuration data for the SYSTEM2.

To interface with the **SYSTEM2** via a PC, you must run an emulation program in your PC. This program is explained later in this appendix.

Note

If the FSC is LESS THAN 50 FEET from the PC, it is considered a "DIRECT" connection. When the distance is greater than 50 feet, modems are required.

Caution

BEFORE making any connections, be sure your computer and peripherals (printer, converter, modem, etc.) are OFF.

A four-conductor cable connects the **SYSTEM2** FSC to the PC. One end of the cable is terminated with a DIN connector, the other end has a 25-pin "D" connector.

- The DIN connector plugs into the TERMINAL socket on the rear of the FSC
- The 25-pin connector plugs into your PC, typically in the COM1 or COM2 serial port. If the "gender" of the 25-pin connector on your computer is the same as that of the communication cable (for example, they are both female), you will have to purchase a "gender-bender" adaptor.

Refer to your PC instruction manual for more information on the serial ports - *not every 25-pin connector on the PC is a communications port*.

Some machines may only have a 9-pin serial port. If so, you will have to purchase an adaptor to convert the 25 pin plug to a 9-pin plug. Most electronic or computer supply stores carry these adapters.

If there is only one serial port on your machine, and it is already being used, you can purchase an additional Serial Card at most computer supply stores. Be sure to read your computer owner's manual prior to buying or installing a card.

Plug the PC power cord into a standard wall socket. You are ready to power up the PC and begin setting up the terminal emulation software.

Most modems have four sockets:

- A 25-pin "D" socket for the PC
- An RJ11 socket (for TEL line)
- An RJ11 socket (for telephone)
- A POWER IN socket

Connecting System2 to the PC

The modem should have come with the cables you need to make the following connections. (If not, you can purchase what you need at most computer supply stores.)

1. Connect the 25-pin socket to the COM1 or COM2 serial port on the back of your computer.
2. Connect a phone cable from the modem RJ11 "LINE IN" jack to your facility telephone jack.

- *If you want the PC to share its line with a telephone, connect the telephone to the RJ11 modem "TEL" jack.*
- *You cannot use the telephone (for voice communication) and the modem simultaneously.*

3. Plug the power adapter into its socket on the modem and into a standard 115 VAC wall socket.

For a PC to communicate with **SYSTEM2**, you must run a terminal emulation program. **Petro Vend** strongly suggests you use PROCOMM® emulation software, made by DATASTORM TECHNOLOGIES, INC. Contact your Petro Vend distributor for details.

Read the Terminal Emulation software manual. For your PC use the values in *Table 20* (refer to the *System2 Installation Manual* for instructions on changing these settings):

Table 20: PC Communication Settings

Baud Rate	Must match SYSTEM2
Data bits	7
COMM Port	An available serial port.
Parity	EVEN
Stop bits	1

- *If you are using direct connection, you will need to set the software to "go local". If you are using a modem, you will need to set its program switches.*

You will also need to enter the telephone number of the **SYSTEM2** site.

Data Formats

This data format is meant to be read by people, and includes a header with configuration data and labels for each included field. In the display format, the transmission of transaction records can be cued from the keyboard.

Formatted data eliminates these labels, substituting data checks, field codes and field separators. This format is meant to transfer transaction data to a computer data base.The Field Codes are described on *page 134*.

To pace the data stream, the transmission of each transaction record must be cued by a specific computer response.

Data Field Structure

To retrieve transaction data in the computer format, append the prefix **`SHOW'** and the suffix **`CF'** to one of the following commands.

```
TRANSACTIONS
TRANSACTION ###
TRANSACTIONS WHERE DATE = mmm dd, yyyy
TRANSACTIONS WHERE DATE < mmm dd, yyyy
TRANSACTIONS WHERE DATE > mmm dd, yyyy
TRANSACTIONS WHERE TIME = hh:mm am/pm
TRANSACTIONS WHERE TIME < hh:mm am/pm
TRANSACTIONS WHERE TIME > hh:mm am/pm
```

```
TRANSACTIONS WHERE CARD = #
TRANSACTIONS WHERE VEHICLE = #
```

The following command will call up transaction 123 in computer format:

```
SHOW TRANSACTIONS 123 CF
```

Search commands can be combined with **`AND'** in the computer format. For example:

```
SH TRANS WH DAT=JAN 1,2000 AND WH TIM>5:00 PM CF
```

Transaction functions are explained in more detail on *page 103*.

When data is requested from **SYSTEM2** in the computer format, **SYSTEM2** first transmits the transaction header and the first transaction. This header *always* includes:

- Codes to indicate which transaction fields will be included in the transmitted record(s)
- a 2-digit checksum and a carriage return
- a line feed (**`|CR|LF|'**).

The **SYSTEM2** will send records each time it receives **`|CR|LF|'** up to the last record. At the last record, the system sends **`//|CR|LF|'**. If the computer session is terminated by the computer with an `X', **SYSTEM2** sends `\\|CR|LF|'.

```
SH TRANS 123CF|CR|LF|   abcdefghijklmno/07|CR|LF|
         123/I/TRUXCO---/SMITH----/VAN1-----/
         02221989/0711/0123/20001-------------/
         60001-------------/03/03/0025000/00100/
         000002500/0066555/105/1234567890/1/1234/
         11/|CR|LF|
|CR|LF|      //|CR|LF|
```

Table 21: Transaction Header Fields

Item	Format	Pad	Inclusion
Number of transactions	4 digits, left justified	zero	optional
Sum of quantities	9 digits, left justified	zero	optional
Transaction field codes	0 - 15 characters	none	always
Checksum	2 digits	none	always

Table 22: Transaction Field Codes

Code	Field	Format	Pad
a	Driver or vehicle name	9 characters each	space
b	Date/time	8/4 digits: mmddyyyy/hhmm	zero
c	Transaction number	4 digits	zero
d	Card #1	19 digits, left justified	space
e	Card #2	19 digits, left justified	space
f	Fuel type	2 digits: 1 - 16	zero
g	Pump number	2 digits: 1 - 99 *or* 3 digits if hose number is specified	zero
h	Quantity	7 digits: ####.###, implied decimal	zero
i	Price	5 digits: ##.###, implied decimal	zero
j	Total	9 digits: #######.##, implied decimal	zero
k	Odometer	1 char, 6 digits: X######; `?' in 1st location indicates *un*reasonable entry, `0' indicates reasonable entry; all blanks if odometer entry *not* prompted ***(NOTE: Not valid for ChipKeys).***	zero
l	MPG	3 spaces: MPG *not* available	zero
m	Miscellaneous	10 digits	space
n	Receipt status	1 digit: 1=issued; 0=*not* issued	none
o	Not used.	Not used.	--

Table 23: Card Field Codes

Code	Field	Format	Pad
a	Card Number	19 digits, left-justified	space
b	Record Type	8 bytes *(see RECORD TYPE table, below)*	none
c	*Not used.*	*Not used.*	--
d	Expiration Date	8 digits: **mmddyyyy**	none
e	Fuel Totals to Date	8 digits: **######.##** (implied decimal)	zero
f	Fuel Totals for Today	8 digits: **######.##** (implied decimal)	zero
g	Monthly Allocation	6 digits: ###### (dollars only, no decimal)	zero
h	Daily Allocation	6 digits: ###### (dollars only, no decimal)	zero
i	PIN Number (card records only)	6 digits	space
j	Odometer	6 digits	zero
k	Reasonability	2 digits	zero
l	Product Restriction	2 digits	zero
m	Quantity Restriction	2 digits	zero
n	Driver or Vehicle Name	9 characters	space

REASON FOR TERMINATION CODES (AUTHORIZATION GRANTED)

Table 24: Reason for Termination Codes - Authorization Granted

Code	Reason	Cause	Possible Solution
C	Pump error, premature busy	No suggestions	
D	Pump error --reset quantity exceed	Pulses being received without current being sensed or handle switch detection.	Check PV268 DIP switch #6 for correct selection (current sense or handle switch). Check current: s/b 100 mA AC minimum.
E	No `PUMP HANDLE BUSY'	No current sense or handle switch detection after pump authorization.	Check PV268 DIP switch #6 for correct selection. Check current draw: s/b 100 mA AC minimum. Make sure handle timeout is long enough. Check wiring to PV270 relay board.
F	No fueling pulses	Current sensed or handle switch detected, but no pulses received from pulser.	Check PV268 DIP switch #1 for correct pulser type. Check pulser wiring. Check pump's First Pulse timer.
G	Pump currently active	No suggestions	
I	Normal	Good transaction.	May appear even for incomplete transaction if current sense threshold is too close to actual current draw. Contact Petro Vend Technical Support.
J	Quantity limit exceeded	Card, account or pump limit reached.	Check programming for card, account or pump
K	Total transaction time exceeded	Pump is programmed to dispense fuel only for a specific time.	Check "MAX TIME FOR FUELING" value, and adjust accordingly.
L	Pulser error	Only in flowswitch applications. Pulses not received within five seconds of flow switch activation.	Check pulser. Possible faulty flow switch.
M	Emergency stop	Emergency stop button was depressed during fueling.	If button was NOT pressed, check E-STOP button for short.
N	Missing pulse detected	Current sensed, pulses received, then fueler stops pumping. As long as pump is ON, Pulse Timer runs.	Lengthen the Pulse Timer duration, or hang the pump up.
O 01	Communication errors	Power interruption during fueling caused termination of transaction.	Check power source. Are noise filters installed in pump motors, solenoid valves, and contactors?
Z	Manager activated	No suggestions	

REASON FOR TERMINATION CODES (AUTHORIZATION DENIED)

Table 25: Reason for Termination Codes - Authorization Denied

Code	Reason	Cause	Possible Solution
b	Bad PIN entry	Wrong PIN entered three times.	Verify PIN assigned to card is correct. If yes, check the keypad with FIT test program.
c	Bad odometer entry	Fueler's card is set for odometer reasonability, and entry falls outside acceptable limits.	Re-enter odometer value. Change reasonability (see Section 11).
d	Bad miscellaneous entry	NOT USED	NOT USED
e	User entry timeout	Fueler did not enter data after inserting card.	Operator error, or possible keypad malfunction.
f	Card # not in positive file	Card not programmed in system.	Program the card into the system database.
g	Card expired	Card has expiration date assigned to it. This date has passed.	Assign new expiration date to card, or issue new card.
i	Card invalidated	Card has not been validated for use in this system.	Change validation status of card.
j	Three bad PIN entries	Fueler has entered incorrect PIN three times.	Verify PIN assigned to card is correct. If yes, check the keypad with FIT test program.
k	No allocation	Daily or monthly limit has been reached on card or account.	If daily, fueler must wait until midnight to reset daily totals. If monthly, new limits must be programmed or totals cleared.
u	Visa transaction failed authorization	Various -- may be phone-line related.	Retry card.

Appendix E - Troubleshooting

Problems & Suggested Solutions

Table 26: Problem/Solution Table

PROBLEM	POSSIBLE SOLUTION
No C/OPT display messages	• Adjust "display viewing angle" potentiometer (on top of the display PC board).
`FAULTY PUMP' C/OPT message	• Three "zero-quantity" transactions -- reinstall pump with INSTALL PCT POS (*page 60*) • Bad pump pulser -- replace pulser
`RESET QUANTITY EXCEEDED' C/OPT message	• •Current sensor/pump handle selector switch in wrong position: change Switch #1 on PV-268 board.
`SYSTEM DOWN' message at one C/OPT	• C/OPT not installed: install C/OPT • Petro-Net wiring problem: check, repair wiring • Possible C/OPT board malfunction: run COMM test to check board; replace board if necessary.
`SYSTEM DOWN' message at ALL C/OPTs	• Possible C/OPT board malfunction(s): run COMM test for each FIT board; replace board(s) if necessary. • •Possible FSC board malfunction; if all C/OPT board pass COMM test, replace FSC board.
`INCORRECT CARD' C/OPT message	• Incorrect network number encoded on card(s); replace card(s). • •Incorrect network number programmed in C/OPT EPROM: replace EPROM.
CARD INVALIDATED C/OPT message	• This card number was invalidated; to validate, see *Validating or Invalidating Cards* on page 100.
UNAUTHORIZED, RE-ENTER C/OPT message	• The card used is not good for that product on that pump. Card user should choose a different pump or product.
`SYSTEM FULL' C/OPT message	• Printer error: clear error. • Transaction buffer filled: clear buffer. • Buffer wraparound not enabled: enable wraparound.
`MEMORY ERROR' message at terminal	• Expanded memory failure: battery switch *not on* during system power failure. • Battery failure: replace battery. • Expanded Memory failure: replace FSC board.
Pulser not counting pulses	• Active/passive pulser selector switch set incorrectly: change Switch #1 on PV-268 board
Newly programmed *messages or pump* parameters not working	• Changes were not downloaded: use `DOWNLOAD command.

Table 26: Problem/Solution Table (Continued)

JOURNAL ERROR GET MANAGER	• The journal printer is unable to print becuase it is offline, unplugged, out of paper, jammed or otherwise inoperable.
Printer not printing transactions	• Communications blocked due to printer error: unblock with `SET JOURNAL' command; printer locked: unlock printer with `UNLOCK' command.

Troubleshooting Flowcharts

The flowcharts on *page 140* through *page 148* give you advice on what to do when the these messages appear on the C/OPT display:

CHECK CARD ORIENTATION message

FAULTY PUMP? RE-ENTER message

INCORRECT CARD message

INCORRECT READING message

INVALID PUMP, RE-ENTER message

JOURNAL ERROR GET MANAGER message

PUMP HANDLE? RE-ENTER message

SYSTEM DOWN message

Other charts give you advice when:

- No communication occurs between the FSC and the PC
- No quantity is shown on the transaction receipts
- A modem doesn't answer the System2

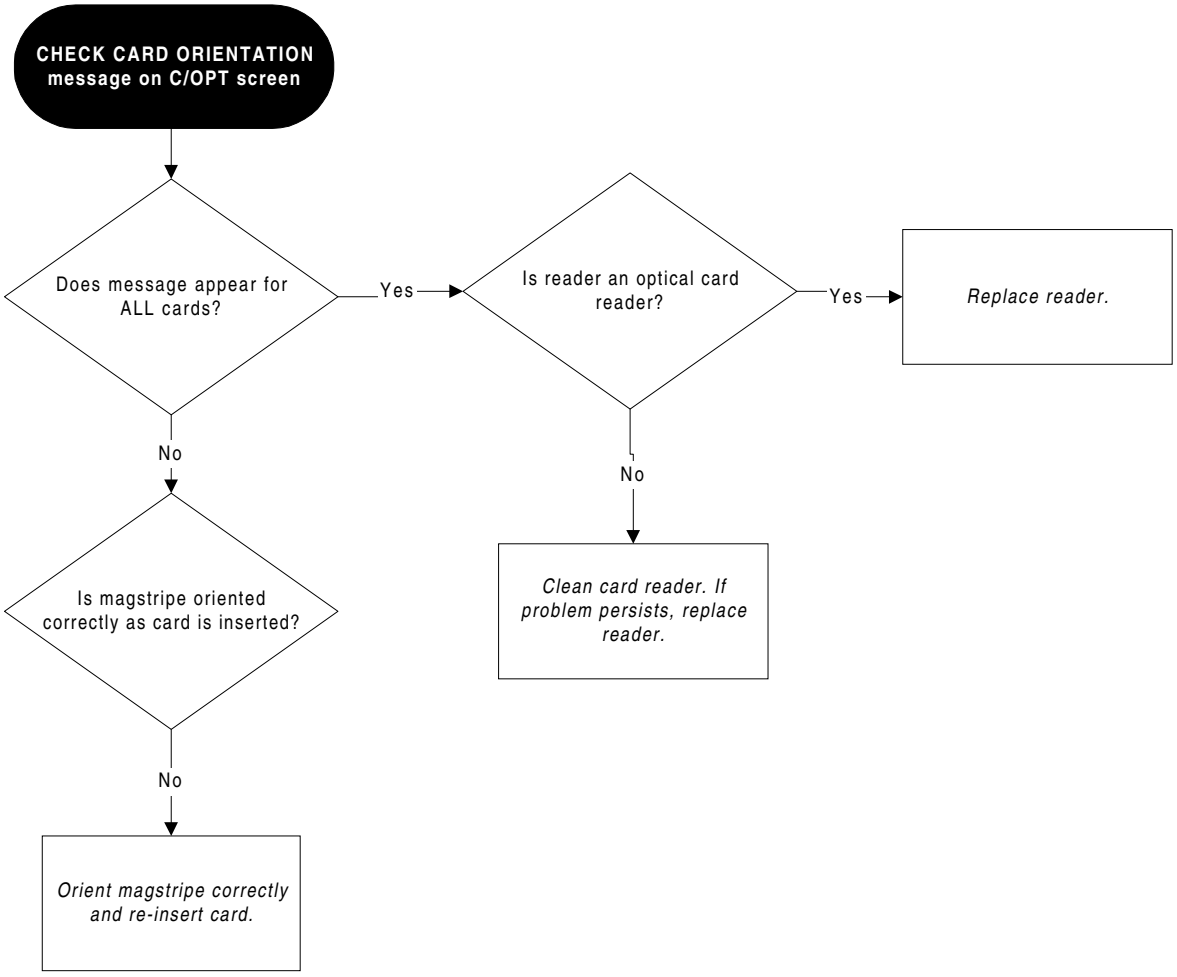


Figure 30: Diagnosing a "Check Card Orientation" Message

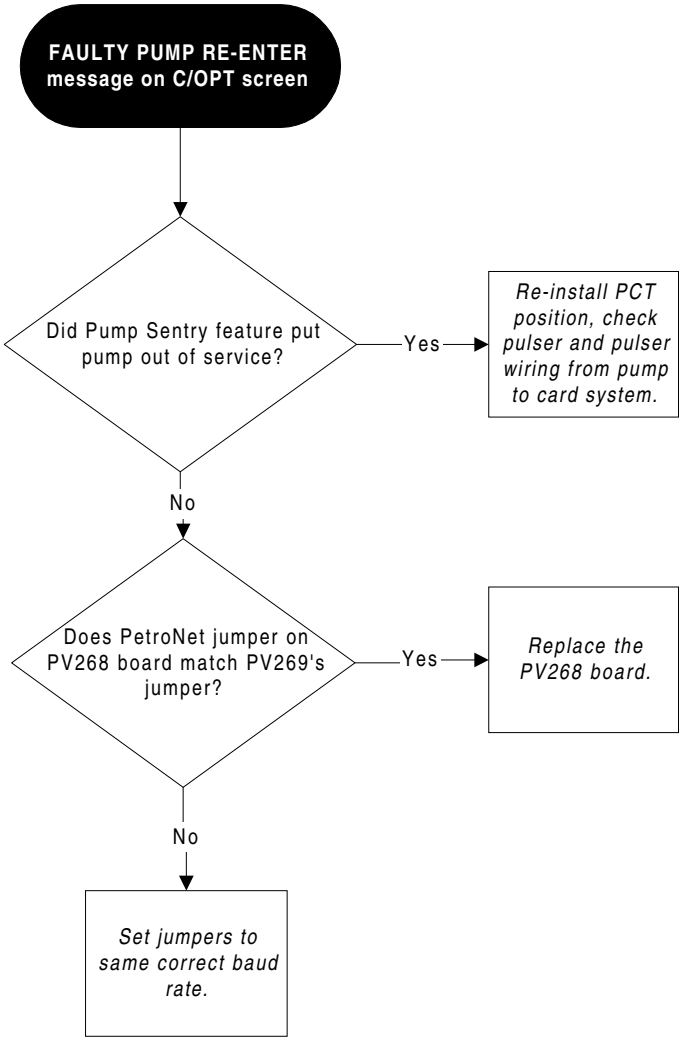


Figure 31: Diagnosing a "Faulty Pump - Reenter" Message

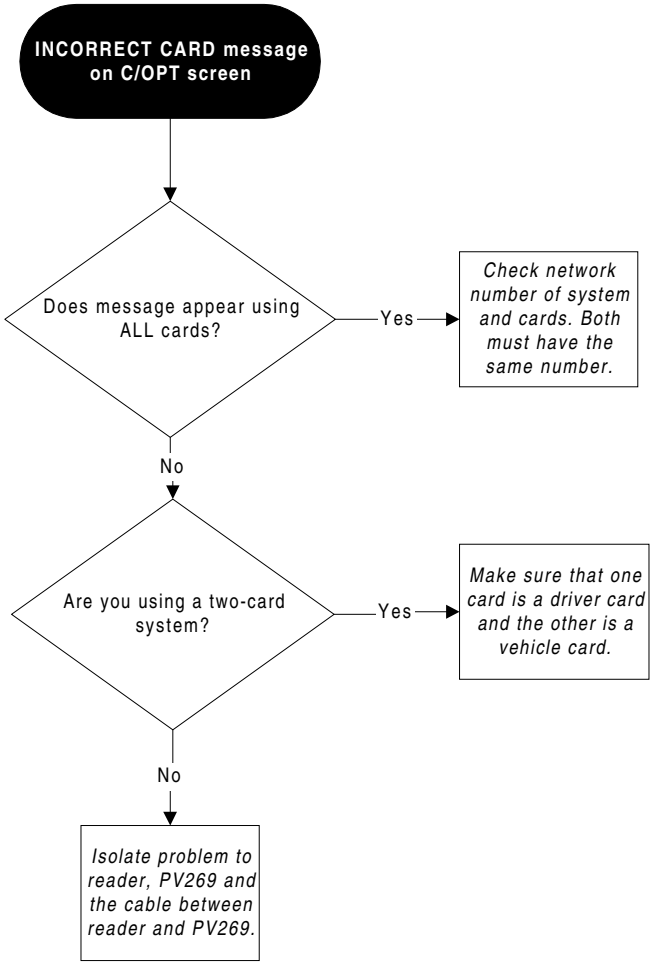


Figure 32: Diagnosing an "Incorrect Card" Message

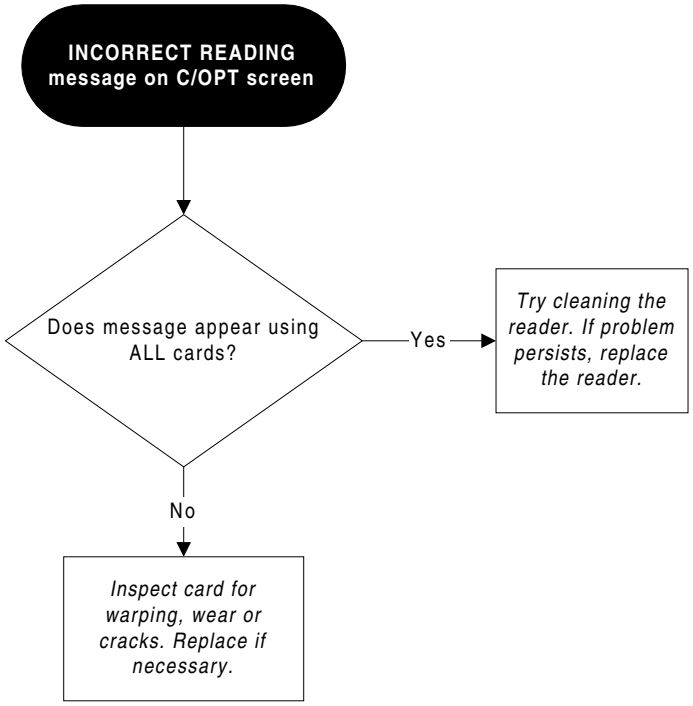


Figure 33: Diagnosing an "Incorrect Reading" Message

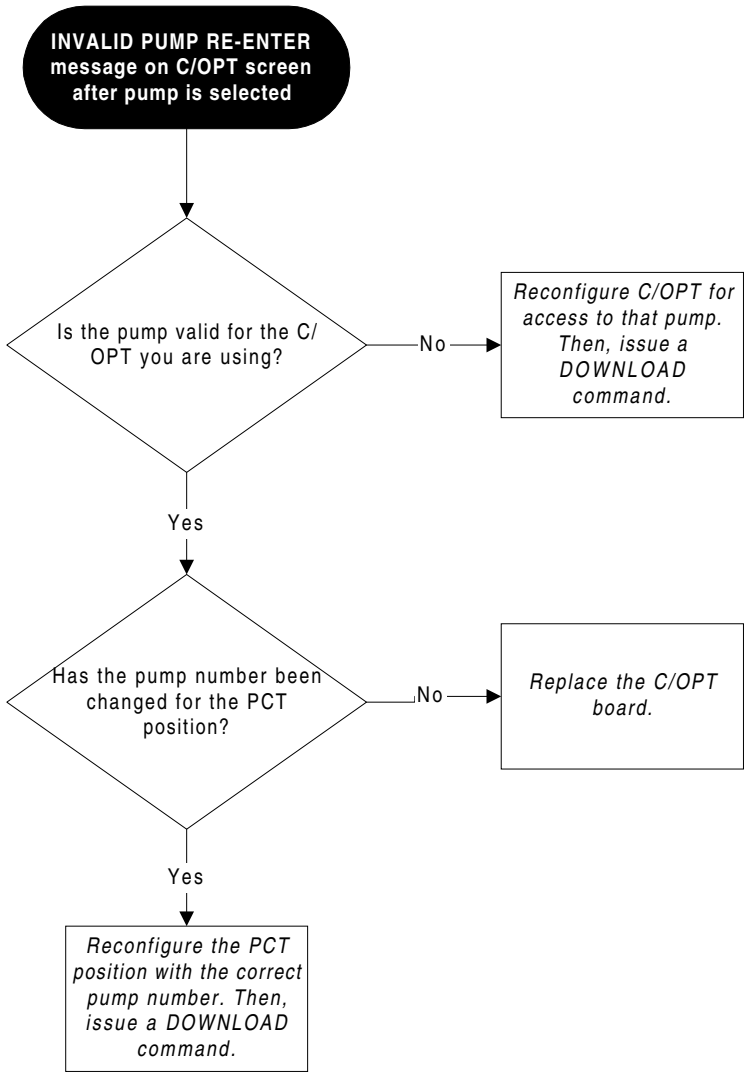


Figure 34: Diagnosing an "Invalid Pump - Reenter" Message

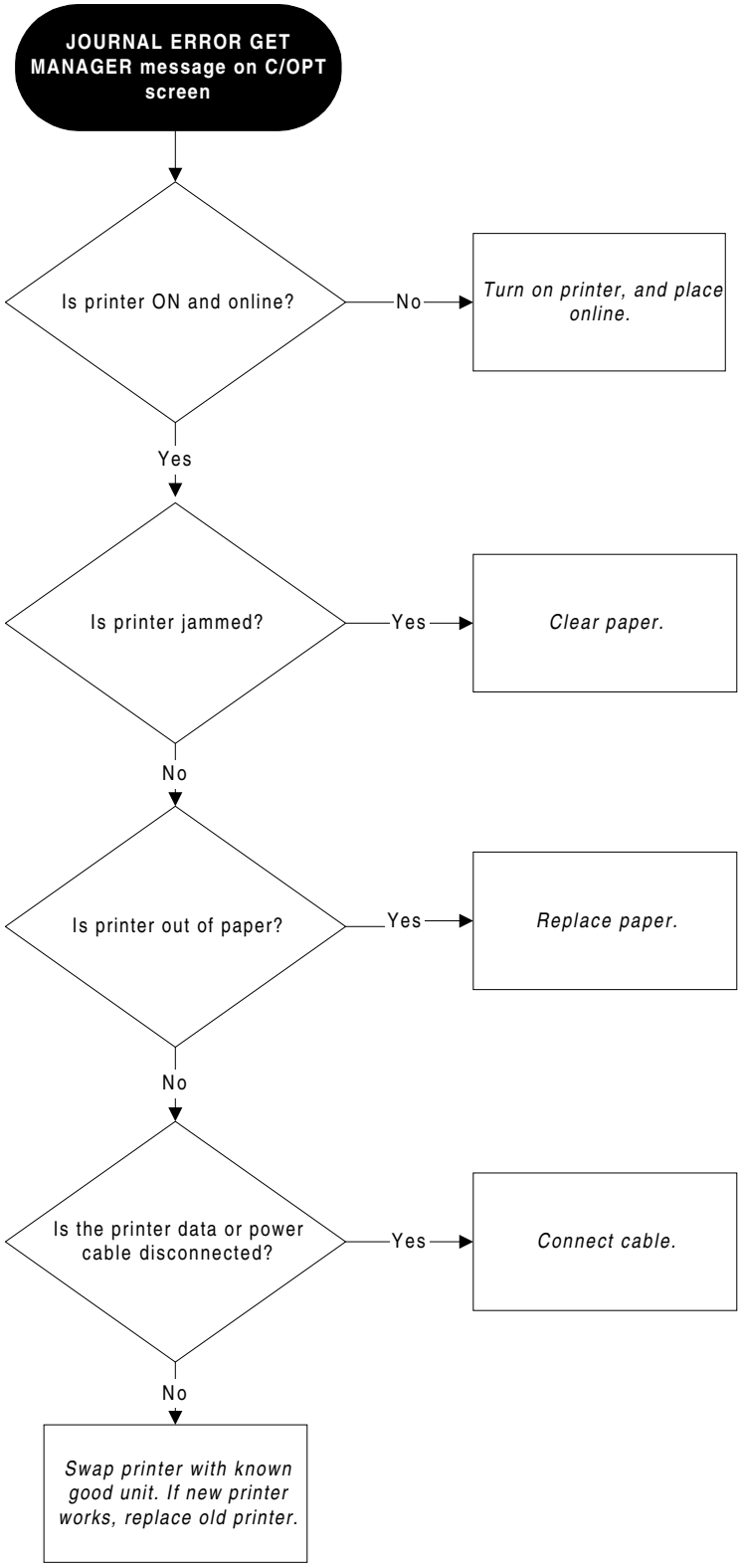


Figure 35: Diagnosing a "Journal Error Get Manager" Message

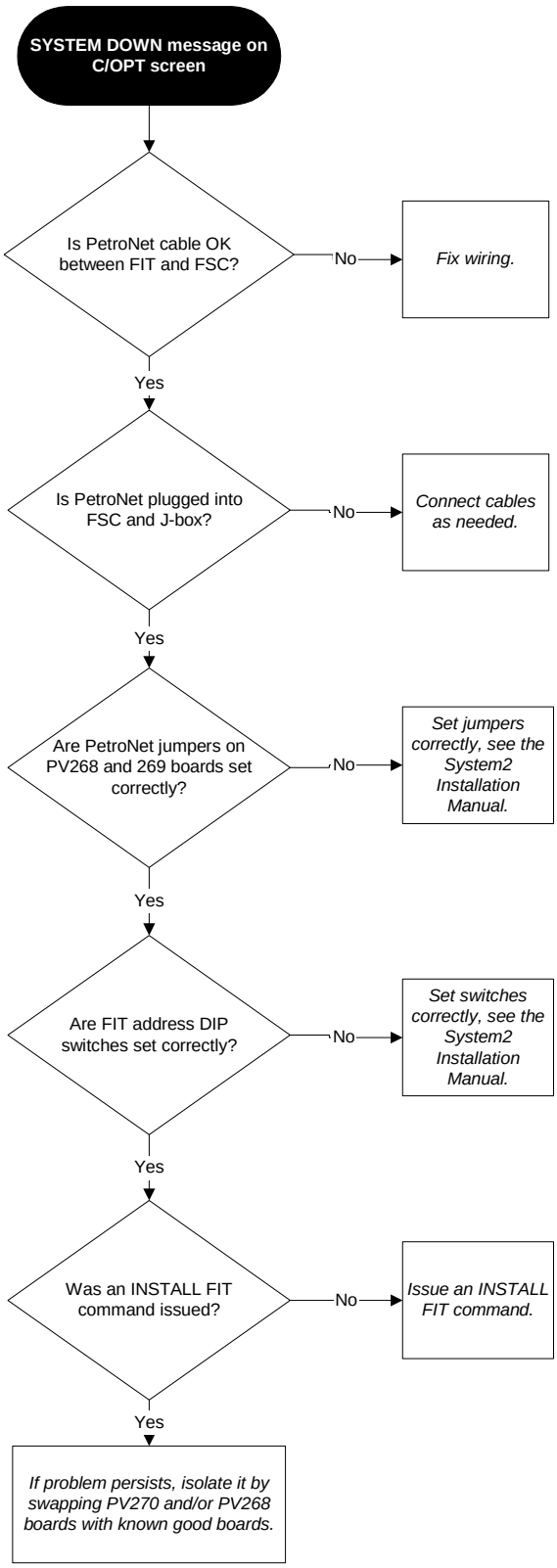


Figure 36: Diagnosing a "System Down" Message

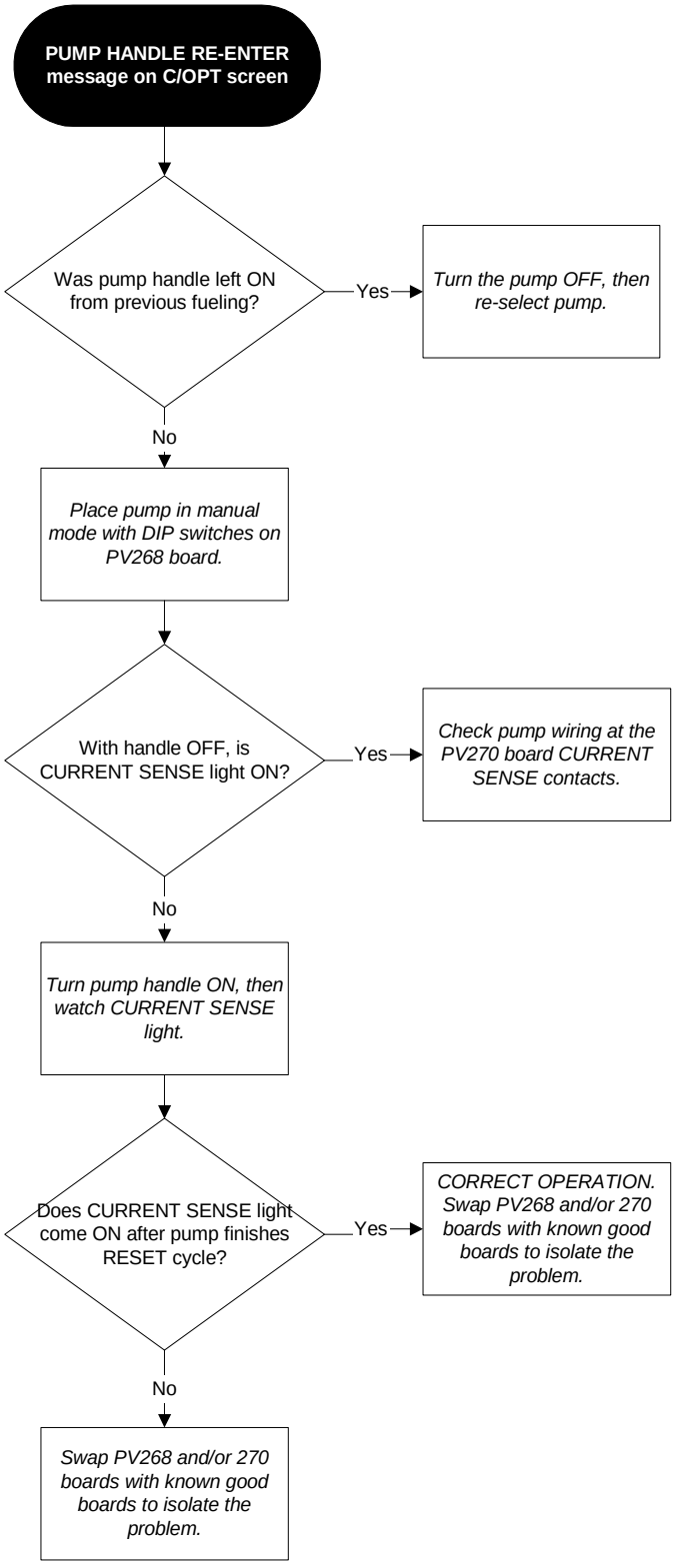


Figure 37: Diagnosing a "Pump Handle-Reenter" Message

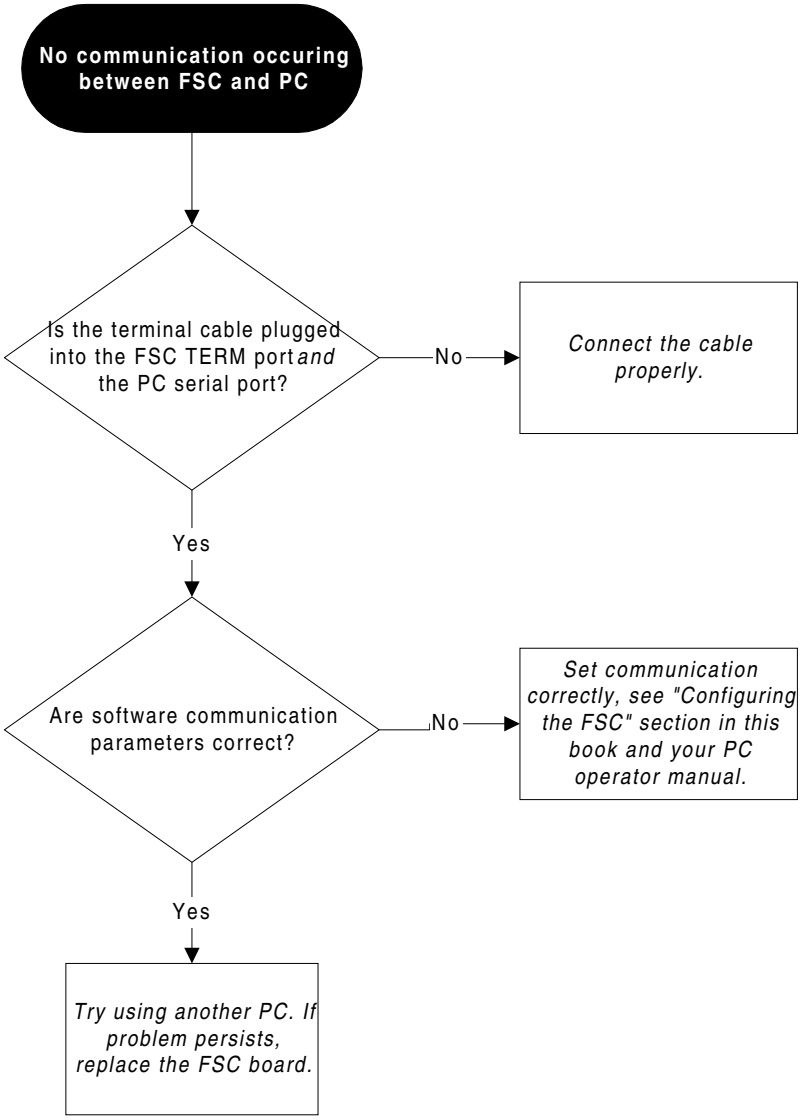


Figure 38: Diagnosing Loss of FSC-to-Terminal Communication

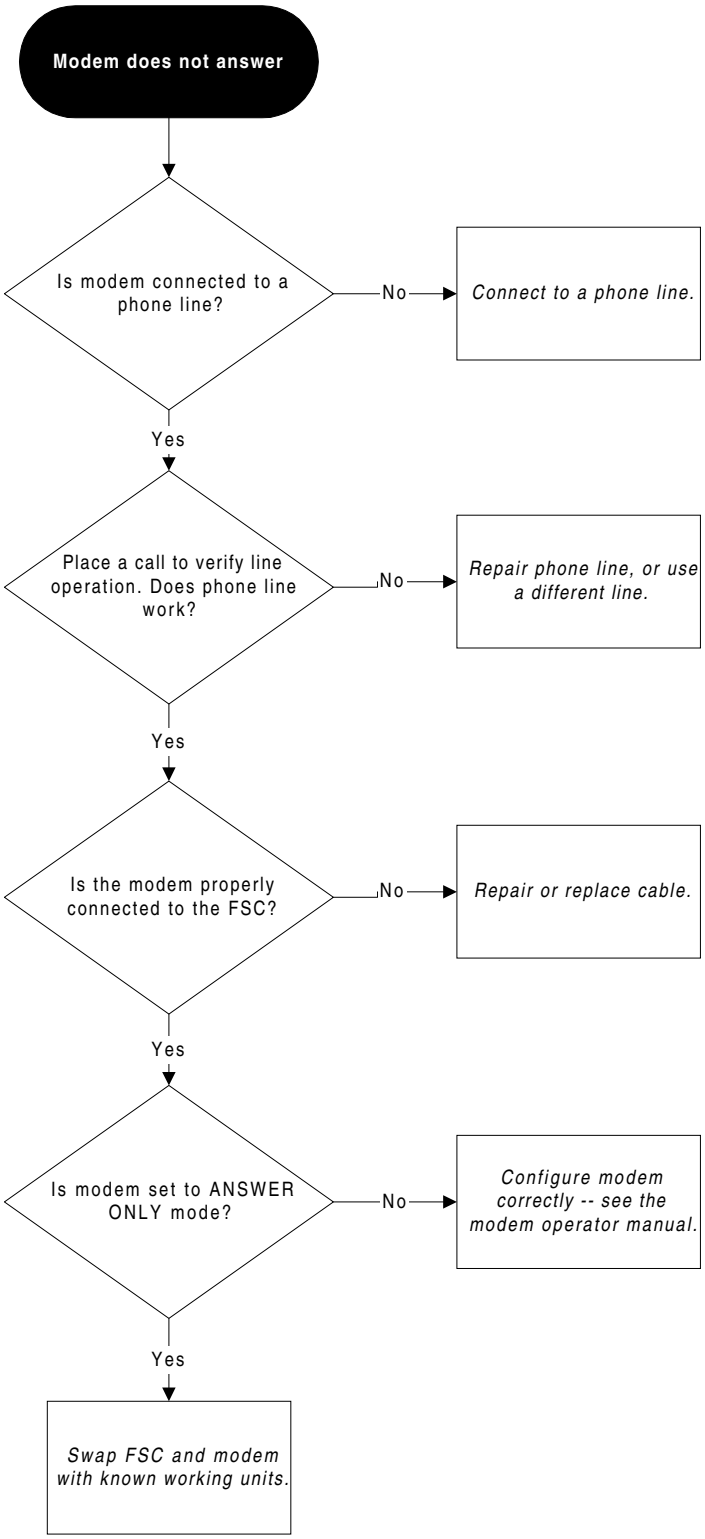


Figure 39: Diagnosing a Modem That Does Not Answer

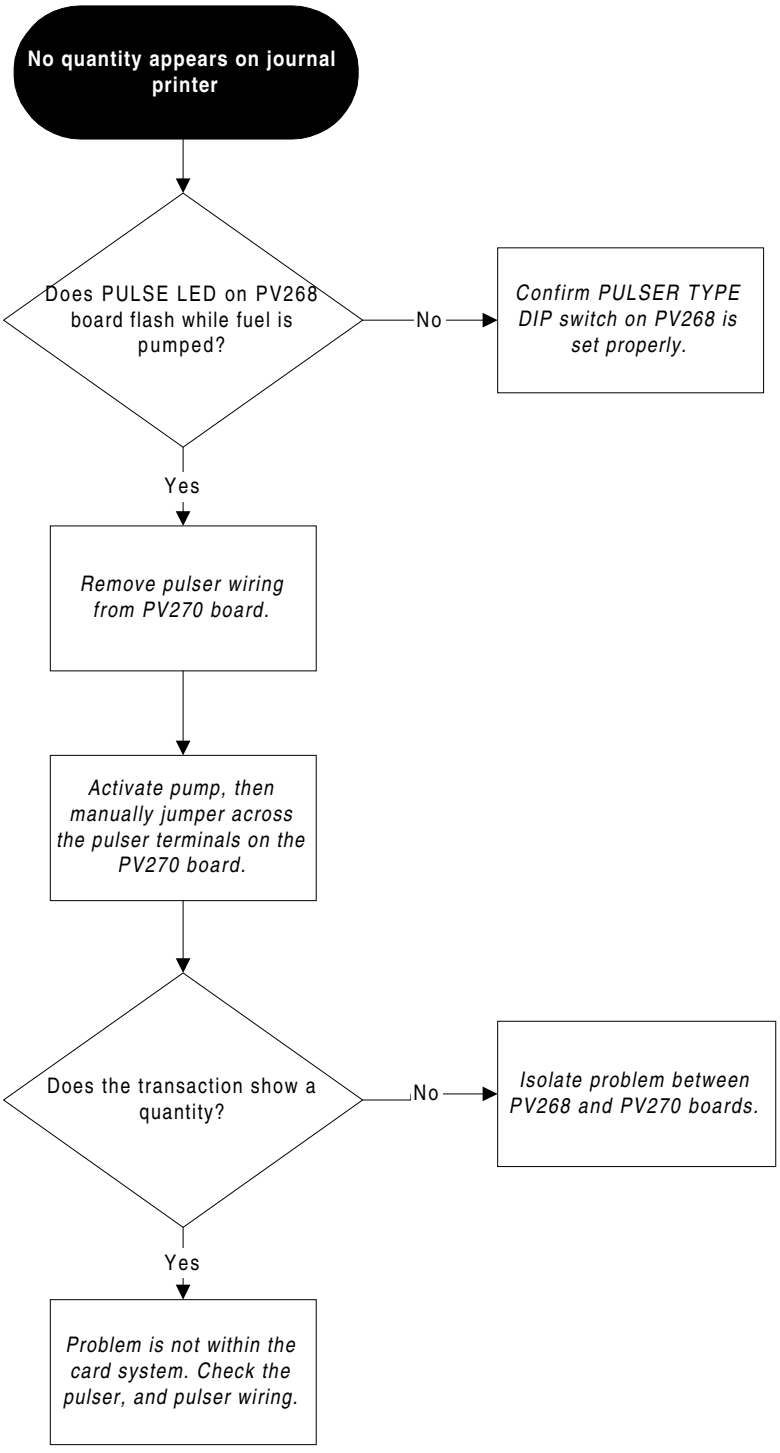


Figure 40: Diagnosing a "No Quantity Appears On Receipt" Message

Appendix F - System2 Commands Summary

Table 27 is a complete list of all System2 commands.

- *Not all versions of System2 software perform all listed commands.*
- [P]Privileged - command requires user to be in privilege mode to use.
- [D]Download – command requires a download for changes to take effect.
- [O]Optional - command requires option to be purchased.
- #Requires your numerical entry.

Table 27: System2 Commands Summary

TIME MANAGEMENT
SET TIME [P]
PRINT/SHOW TIME
SET DATE [P]
PRINT/SHOW DATE
FORMAT DATE
SET TIME CHANGE [P]
PRINT/SHOW TIME CHANGE
SET SYSTEM TIMES [P]
PRINT/SHOW SYSTEM TIMES
SET LIGHT [P]
OPEN [P]
CLOSE [P]

SYSTEM MEMORY
SET RAM [P]
PRINT/SHOW RAM

Table 27: System2 Commands Summary (Continued)

PROGRAMMABLE DATABASE
SET CARD BUFFER [P]
SET SECURITY TABLE [P]
PRINT/SHOW SECURITY TABLE
INSERT CARD [P]
COPY CARD [P]
EDIT CARD [P]
DELETE CARD [P]
PRINT/SHOW CARD
PRINT/SHOW CARD “#”
INSERT ACCOUNT [P]
EDIT ACCOUNT [P]
DELETE ACCOUNT [P]
PRINT/SHOW ACCOUNT
PRINT/SHOW ACCOUNT “#”

FUEL/TANKS
SET FUELING UNITS [P]
PRINT/SHOW FUELING UNITS
SET FUELTYPE “#” [P]
PRINT/SHOW FUELTYPE
SET TANK “#” [P]
PRINT/SHOW TANK

PUMP CONTROL TERMINAL
CONFIGURE PCT “#” [P, D]
CONFIGURE PCT “#” POS “#” [P, D]
INSTALL PCT “#” [P]
INSTALL PCT “#” POS “#” [P]
REMOVE PCT “#” [P]

Table 27: System2 Commands Summary (Continued)

REMOVE PCT “#” POS “#” [P]
REMOVE PUMP “#”
PRINT/SHOW PCT “#”
CONFIGURE PUMP #
PRINT/SHOW PUMP “#”
INSTALL PROGRAM [P]
REMOVE PROGRAM [P]

COMMERCIAL/OUTDOOR PAYMENT TERMINAL
CONFIGURE C/OPT “#” [P, D]
INSTALL C/OPT “#” [P]
REMOVE C/OPT “#” [P]
PRINT/SHOW C/OPT “#”

OUTDOOR PAYMENT TERMINAL
CONFIGURE OPT “#” [P, D]
INSTALL OPT “#” [P]
REMOVE OPT “#” [P]
PRINT/SHOW OPT“#”

MESSAGES
FORMAT DISPLAY “#” [P, D]
FORMAT DISPLAY DEFAULT [P, D]
PRINT/SHOW DISPLAY
PRINT/SHOW DISPLAY “#”
FORMAT KEYBOARD “#” [P, D]
PRINT/SHOW KEYBOARD
PRINT/SHOW KEYBOARD “#”

Table 27: System2 Commands Summary (Continued)

RECEIPT PRINTER
FORMAT RECEIPT HEADER [P, D]
PRINT/SHOW RECEIPT HEADER
FORMAT RECEIPT TRAILER [P, D]
PRINT/SHOW RECEIPT TRAILER
FORMAT RECEIPT BODY [P, D]
SET BONUS POINTS [P, D]
PRINT/SHOW BONUS POINTS
FORMAT RECEIPT BONUS POINTS [P, D]
PRINT/SHOW RECEIPT BONUS POINTS

TRANSACTION BUFFER
SET TRANSACTION [P]
PRINT/SHOW TRANSACTION
PRINT SHOW TRANSACTION “#”

JOURNAL PRINTER
SET JOURNAL PRINTER [P]
PRINT/SHOW JOURNAL PRINTER
LOCK JOURNAL
UNLOCK JOURNAL

RESTRICTIONS
SET PUMP RESTRICTION [P]
PRINT/SHOW PUMP RESTRICTION
SET QUANTITY [P]
PRINT/SHOW QUANTITY

Table 27: System2 Commands Summary (Continued)

ODOMETER REASONABILITY
SET REASONABILTY [P]
PRINT SHOW REASONABILITY

SITE ID
SET SITE ID [P]
PRINT/SHOW SITE ID

PASSWORD
SET PASSWORD [P]
PRINT/SHOW PASSWORD

DUAL LANGUAGE
SET LANGUAGE [P]
PRINT/SHOW LANGUAGE

PUMP/FUEL REPORTS
PRINT/SHOW FUELTYPE “#” TOTALS
PRINT/SHOW PUMP “#” TOTALS
CLEAR PUMP “#” TOTALS
PRINT/SHOW PCT “#” TOTALS
CLEAR PCT “#” TOTALS
PRINT/SHOW TANK
PRINT/SHOW MIDNIGHT TOTALS

CARD/ACCOUNT REPORTS
PRINT/SHOW <validity> <source><category> CARD <range>
PRINT/SHOW ACCOUNT
PRINT/SHOW ACCOUNT “#”

Table 27: System2 Commands Summary (Continued)

PRINT/SHOW CARD ACCOUNT “#”
PRINT/SHOW CARD SUMMARY

TRANSACTION REPORTS
PRINT/SHOW TRANSACTION
PRINT/SHOW TRANSACTION “#”
PRINT/SHOW TRANSACTION SUMMARY
PRINT SHOW DAY
PRINT/SHOW DAY <mmm dd,yyyy>
CLEAR TRANSACTION <mmm dd,yyyy> SEQUENCE <#> [P]
CLEAR TRANSACTION [P]
SHOW TRANSACTION CF

TRANSACTION SEARCHES
PRINT/SHOW TRANSACTION WHERE DATE = <mmm dd,yyyy>
PRINT/SHOW TRANSACTION WHERE DATE < <mmm dd,yyyy>
PRINT/SHOW TRANSACTION WHERE DATE > <mmm dd,yyyy>
PRINT/SHOW TRANSACTION WHERE TIME = <hh:mm am/pm>
PRINT/SHOW TRANSACTION WHERE TIME < <hh:mm am/pm>
PRINT/SHOW TRANSACTION WHERE TIME > <hh:mm am/pm>
PRINT/SHOW TRANSACTION WHERE CARD = <#>
PRINT/SHOW TRANSACTION WHERE VEHICLE = <#>
PRINT/SHOW TRANSACTION WHERE ACCOUNT = <#>

SHIFT
SHIFT [P]
PRINT/SHOW SHIFT

MODEM/PASSTHRU PORT
CALL [P]

Table 27: System2 Commands Summary (Continued)

PASSTHROUGH [P]

INTEFACING TO EXTERNAL COMPUTER
COMPUTER (TEST) <command> [P]
ECHO [P]
BACKUP “#” [P]
RESTORE [P]
UPDATE <site id(/fields)(/checksum)> [P]
SYSBACKUP [P]
SYSRESTORE <####> [P]

PUNCHCODE
PUNCHCODE [P,O]

TROUBLESHOOTING
TEST [P] Warning – AUTHORIZED USE ONLY – may erase system configuration!

REPORT PACKAGE
REPORT [P,O]

NETWORKS
SET NETWORK [P]
SET HOST [P]
SET BATCH [P]
SET FLEET [P]
SET GASCARD [P]

FLEETLINK
INSTALL VIT “#” [P, D]

Table 27: System2 Commands Summary (Continued)

INSTALL VIT “#” POS “#” [P, D]
REMOVE VIT “#” [P, D]
REMOVE VIT “#” POS “#” [P, D]
PRINT/SHOW VIT “#” POS “#” [P, D]
INSERT VIU [P]

Appendix G - Cold-Starting the FSC

Cold Start With Power OFF

To power up SYSTEM2, turn ON the power switch for each FIT and, if applicable, each remote PCT. If not already done from terminal configuration, plug the FSC power supply into a standard AC socket.

When the FIT is properly installed and functioning, its display shows the following series of messages and information:

```
TESTING RAM
VERSION ##.##
DISPLAY TYPE
RECEIPT LENGTH
TESTING READERS
READER1 TYPE
READER2 TYPE
TESTING EPROM
TESTING EPROM
DOWNLOAD ...
```

The last message indicates that the FIT is running

Note

If the download message does not display, turn the system OFF and check the installation wiring.

Cold-Start With Power ON

To cold-start the SYSTEM2 with power ON, do the following on the FSC board:

1. With power ON, unplug the battery connector from the PC board.
2. While holding down the TEST button, hit the RESET button. A "C" appears in the FSC display.
3. Release the TEST button, and reconnect the battery. The FSC now enters the communication default mode described in the next section.

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Notes:

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